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GUIDELINES FOR
**MANAGEMENT INVOLVING
GRIZZLY BEARS IN THE
GREATER YELLOWSTONE
AREA...** PLEASE RETURN



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DECEMBER 1979

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Guidelines for management involving griz



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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

R-4

JR 15 30051

REPLY TO: 2630 Habitat

JUN 19 1980

SUBJECT: Addendum to the "Guidelines for Management Involving
Grizzly Bears in The Greater Yellowstone Area"

TO: Forest Supervisor, Targhee N.F.



Enclosed is the approved subject addendum concerning bear baiting.
Please attach this addendum to all copies of the final "Guidelines."

A copy of the addendum will be sent to the Idaho Falls and Boise offices
of the Idaho Department of Fish and Game and the Boise office of the Fish
and Wildlife Service.

Jeff H. Simon
JEFF H. SIMON
Regional Forester

Enclosure

cc: (w/enc.)

DRF-R

RM

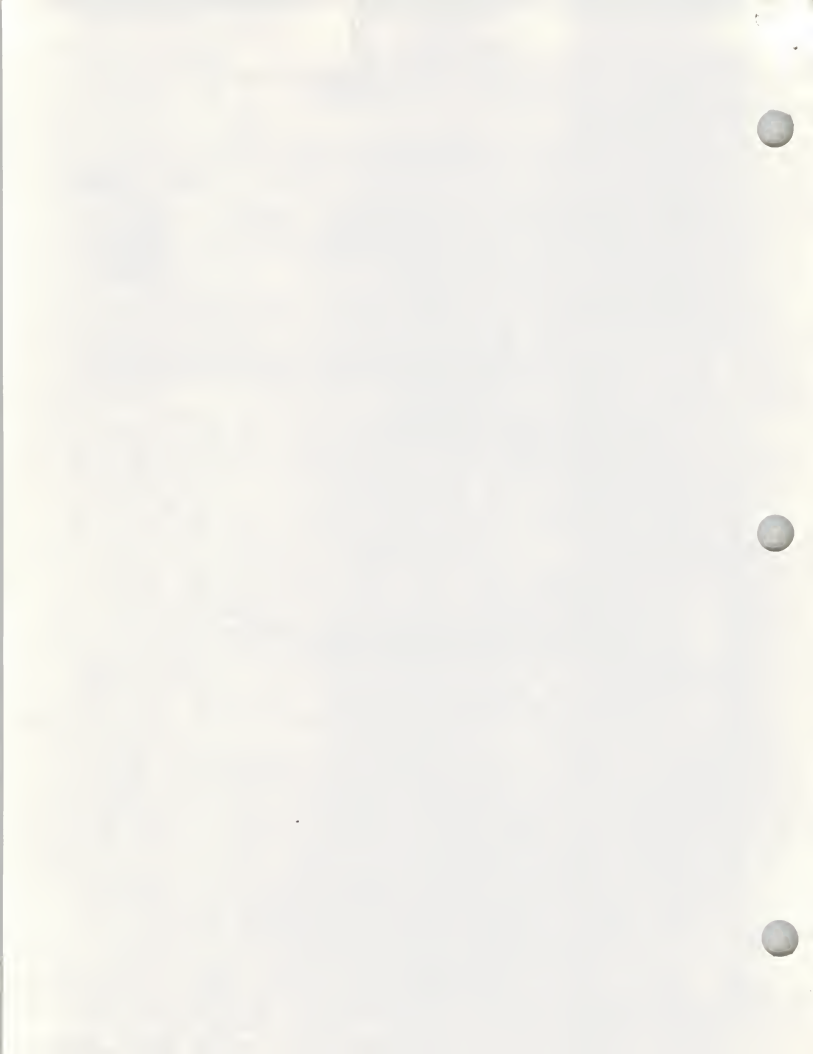
R-1 (WL&F)

R-2 (WL) ✓

Bridger-Teton N.F.

F&WS (Boise)

Idaho Department of Fish and Game (Idaho Falls and Boise)
Wyoming Game and Fish Department (Cheyenne)



Forest Service
Intermountain Region
Addendum to
Guidelines for Management
Involving Grizzly Bears in The
Greater Yellowstone Area

PURPOSE

This addendum modifies the guidelines pertaining to the practice of placing bait for the sport hunting of black bear in the State of Idaho. The modification corrects an inconsistency between the guidelines and the State of Idaho Big Game Regulations.

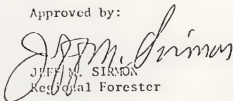
The guidelines prohibit the use of bait in those areas delineated as Management Situation 1. The Idaho Regulations permit seasonal use of bait in certain areas that are within Management Situation 1. The current Idaho regulations permit baiting from January 1 through June 30.

MODIFICATION STATEMENT

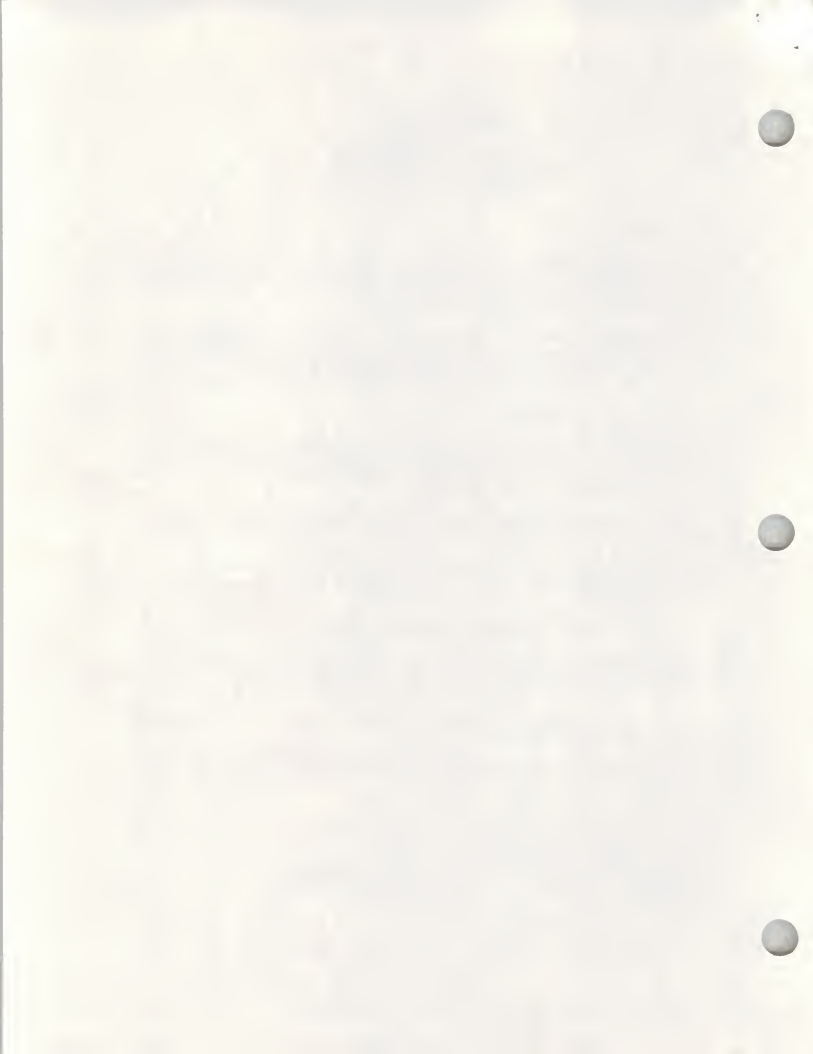
Placing bait for the purpose of black bear hunting will be permitted in those areas delineated as Management Situation 1 on the Targhee National Forest that are coincidental with the areas authorized for bear baiting in the Idaho Regulations provided:

1. Use of the area by grizzly bears during the authorized baiting period is considered unlikely.
2. A Targhee National Forest permit system is in existence to ensure that baiting occurs only in acceptable areas during the authorized time period.
3. No baiting is permitted on any active grazing allotment.
4. Baiting is immediately discontinued and the organic matter removed should grizzly bears be observed in an area previously authorized for baiting.
5. The guidelines for placement of bait in Management Situation Areas 2 and 3 are followed.
6. All other stipulations of the Targhee National Forest Bear Bait Permit are met.

Approved by:


JEFF M. SIMON
Regional Forester

Date: JUN 19 1980



This is an animal that cannot compromise or adjust its way of life to ours. Could not by its very nature, could not even if we allowed it the opportunity, which we did not. For the grizzly bear there is no freedom but that of unbounded space, no life except its own. Without meekness, without a sign of humility, it has refused to accept our idea of what the world should be like. If we succeed in preserving the wild remnant that still survives, the glory will rest primarily on this bear whose stubborn vigor has kept it alive in the face of increasing and seemingly hopeless odds.

-adapted from Robert Porter Allen



PREFACE

These guidelines were developed as an interagency effort. All agencies indicated their approval through letters to the Shoshone National Forest Supervisor.

The guidelines were submitted to the U.S. Fish and Wildlife Service for formal consultation as required by 50 C.F.R., Sec. 402.04. The Biological Opinion states, "It is our opinion that implementation of the Guidelines for Management Involving Grizzly Bears in the Greater Yellowstone Area will promote conservation of the grizzly bear". The Biological Opinion is enclosed as an appendix to the guidelines.

Management of the grizzly bear in Yellowstone National Park will be in accordance with the Yellowstone Operating Procedure for Bear Management. Yellowstone Park is totally within management situation 1 (see pages 3, 4, and 53).

The recommendations made in the Biological Opinion will be addressed by the appropriate agency when they implement these guidelines.

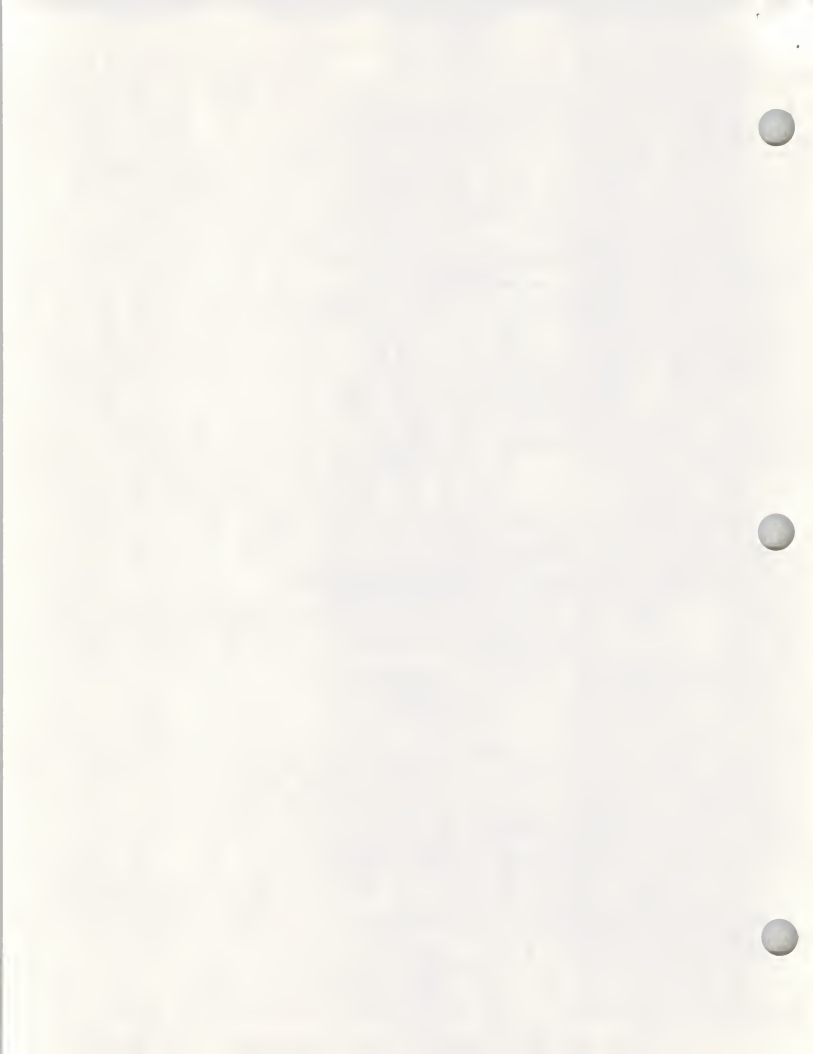


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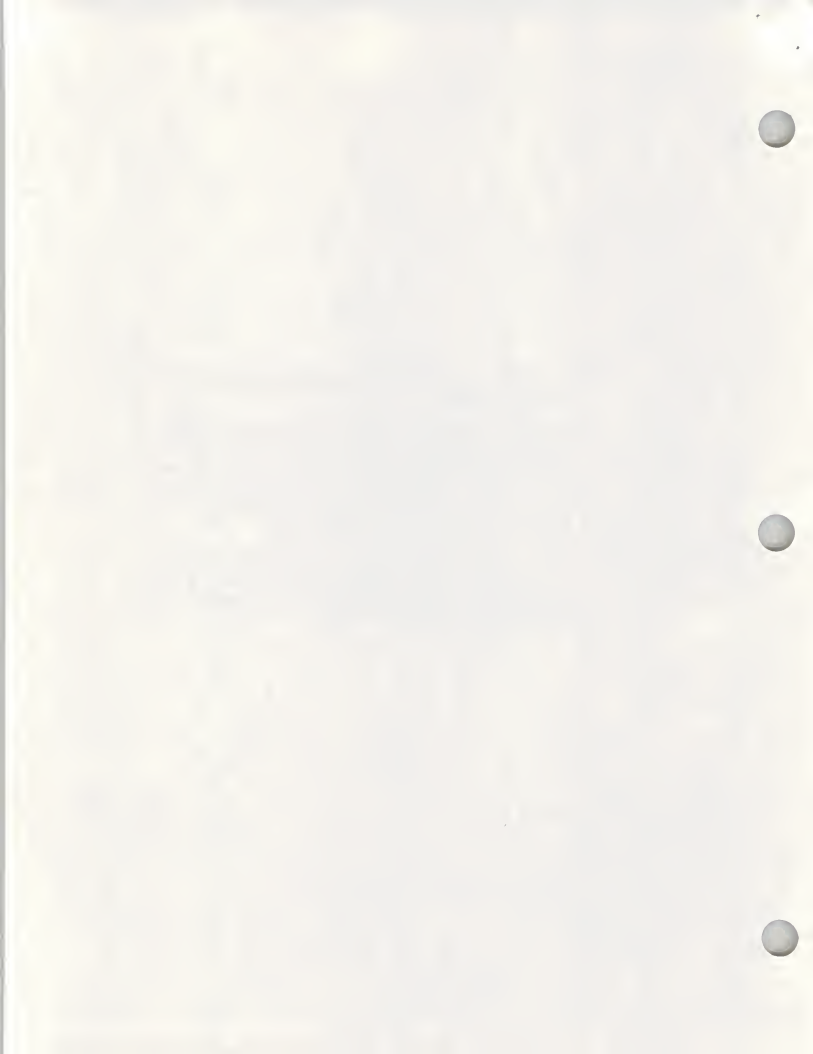


FOREWARD

There are many different images of the grizzly bear in the public view. Visions of fear and intimidation are often expressed along with those of beauty and respect.

In general, the public attitude toward grizzlies, as expressed through laws and regulations, has changed significantly during the last two decades. Officially, the grizzly can no longer be treated uniformly as an enemy and marauder to be killed without regulation or otherwise condemned as a result of actual or anticipated conflict with man. Instead, the species is now highly valued for its own sake and for the sake of maintaining ecosystem stability through species abundance and diversity. In addition, the grizzly is highly valued as a representative, perhaps an indicator, of truly wild places which anchor the human conscience in images of human and nonhuman origins and pristine ecosystem functioning.

The resource management agencies in the Greater Yellowstone Area are proud to accept the management charge of the Endangered Species Act to conserve the grizzly bear, a threatened species. These management guidelines will serve as the basis for our aggressive pursuit of the objectives of conserving grizzly bears and their habitat and of providing balanced resource uses to meet the overall management goal of providing a sustained flow of all wildland resources.



I. INTRODUCTION

The Endangered Species Act (ESA) (P.L. 93-205) requires special protection and management on Federal lands for the grizzly bear (*Ursus arctos horribilis*), a threatened* species*. Forest Service and Park Service personnel cooperatively developed guidelines for grizzly protection and management in the National Forests and National Parks of the Greater Yellowstone Area (Figure 1, page 52) in compliance with ESA (FSM 2601.1).

II. BACKGROUND

Grizzly bear populations and distribution have been greatly reduced in the Western United States since the early 1900's because of loss of habitat and conflicts with man. One of the last remaining grizzly populations occurs in the Greater Yellowstone Area. Here, the welfare of the grizzly bear has greatly concerned scientists and laymen, especially during the last decade. The effects of open-pit garbage dump closures, hunting, domestic livestock grazing, roads and road construction, recreation activities, and logging on grizzly bears and their habitat have been concerns. The Interagency Grizzly Bear Study Team, with members from the National Park Service, U.S. Forest Service, U.S. Fish and Wildlife Service, and the States of Idaho, Montana, and Wyoming, was appointed in 1971, to provide research information about the grizzly population and its habitat in the Yellowstone Area. In July 1974, an ad hoc committee of the National Academy of Sciences concluded that the Yellowstone grizzly was not in immediate danger of extinction, but that conservative management of the species was necessary.

On August 1, 1975, the grizzly bear south of Canada was determined to be a threatened species by the Secretary of Interior under ESA authority. This determination required Federal agencies to:

1. utilize their authorities to carry out conservation programs for listed species;
2. insure that their activities not jeopardize the continued existence of a listed species; and,
3. insure that their activities or programs not result in the destruction or adverse modification of critical habitat.

III. POLICY

A. Park Service Grizzly Bear Policy

Management policies of the National Parks are designed to:

1. perpetuate wild, free-ranging grizzly bear populations; and,
2. minimize conflicts between humans and grizzly bears by reducing man-generated food sources and by regulating visitor distribution.

Specifically, the Park Service will identify, within Park boundaries, grizzly habitat requirements. As necessary, the Service shall control visitor use and access to such habitat, including closure to entry for other than official purposes. Active management programs, where necessary, will be carried out to perpetuate the natural distribution and abundance of grizzlies and the ecosystems on which they depend, in accordance with existing Federal laws. The Service will cooperate with the Fish and Wildlife Service, which is recognized as the lead agency in matters pertaining to threatened or endangered species.

Management actions for the protection and perpetuation of grizzly bears shall be incorporated into the resources management plan. The Yellowstone and Grand Teton National Park Grizzly Bear Management Programs are included in the Appendix, page 66. The Programs will complement and supplement these Guidelines.

B. National Forest System Grizzly Bear Policy

National Forests in the Greater Yellowstone Area will conserve* the grizzly as a species (ESA) and provide habitat suitable for the perpetuation of the species (FSM 2603).

*See glossary Page 65

Grizzly bear habitat will be maintained and enhanced, and grizzly-human conflict* potential will be minimized. State wildlife management agencies and the U.S. Fish and Wildlife Service will, after consulting with the National Forests, perform grizzly control actions including live-trapping, relocation and removal. Specific policy is stated for the following resource management systems.

1. Wildlife Management

As a threatened species, grizzly bears will receive, along with other listed species, the highest priority in maintaining and developing suitable habitat through:

- a. coordination of grizzly population and habitat needs with the management of other National Forest resources; and
- b. specific habitat improvement projects (FSM 2630.2). Habitat improvements which have an adverse impact on grizzlies will be deferred (FSM 2630.3).

The possible effects of existing or proposed land uses upon grizzlies and/or their habitat will be determined through a competent review or biological assessment (FSM 2670). The "Method for Determining Grizzly Bear Habitat Quality and Estimating Consequences of Impacts on Grizzly Habitat Quality" (Appendix, page 79) is recommended for review or assessment of major projects or activities.

2. Timber and Fire Management

The protection needs for grizzlies and/or their habitat will be considered in all timber and fire management programs (FSM 2606.23). Proposed logging activities and associated road construction will be evaluated to assure protection of grizzlies and/or their habitat.

3. Range Management

Domestic livestock grazing in grizzly use areas is an acceptable practice if done under approved allotment management plans reflecting sensitivity for the ecological needs of the grizzly. Important habitat for grizzlies will be protected in all range management and improvement programs (FSM 2602.11).

4. Recreation Management

The protection needs for grizzlies and/or their habitat will be considered in providing for recreation use. Development of any recreation facilities or activities detrimental to grizzlies or to their important habitat will be deferred (FSM 2606.12).

5. Minerals, Watershed, and Special Uses Management

The protection needs of grizzlies and/or their habitat will be considered in all watershed management programs (FSM 2606.14), and in all mining and special use administration activities which have the potential to affect grizzlies and/or their habitat. Grizzly habitat and grizzly-human conflict potential will be evaluated fully in administering and evaluating applications or proposals for:

- a. mining activities involving minerals, gas and oil, and geothermal exploration and production;
- b. water developments;
- c. resorts and summer homes under special use permits;
- d. all other special use and nonspecial use activities (FSM 2700) which affect or have the potential to affect grizzlies and/or their habitat.

6. The protection needs of grizzlies and/or their habitat will be considered in engineering, forest insect and disease control, and landownership adjustment activities (FSM 2606.32, 2606.24, and 2606.31).

7. An environmental analysis shall be made for all policies, plans, programs and projects affecting resources, or other land uses, or the quality of the physical, biological, economic, and social environment (FSM 1940.3). Management Direction and Management Guidelines contained in "Guidelines for Management Involving Grizzly Bears in the Greater Yellowstone Area" will be used as an information source and guidance in conducting environmental analyses to support Land and Resource Management Plans and specific projects.

*See glossary - Page 65

IV. GRIZZLY BEAR MANAGEMENT SITUATIONS*

Five different grizzly management situations are described for the Greater Yellowstone Area. All National Forest and National Park lands will be identified by appropriate situations (Figure 2, page 53). Each management situation fits a type of land area where unique:

1. grizzly populations and habitat conditions exist; and,
2. management direction applies.

Forest Supervisors and Park Superintendents will identify the different management situation areas in their respective areas of responsibility.

A. Management Situation 1

1. Population and habitat conditions The area contains grizzly population centers (areas key to the survival of grizzlies where seasonal or year-long grizzly activity, under natural, free-ranging conditions is common) and habitat components needed for the survival and recovery of the species or a segment of its population. The probability is very great that major Federal activities or programs may affect (have direct or indirect relationships to the conservation and recovery of) the grizzly.
2. Management direction Grizzly habitat maintenance and improvement (improvement applies to Forest Service only), and grizzly-human conflict minimization will receive the highest management priority (FSM 2603). Management decisions will favor the needs of the grizzly bear when grizzly habitat and other land use values compete. Land uses which can affect grizzlies and/or their habitat will be made compatible with grizzly needs or such uses will be abolished or eliminated. Grizzly-human conflicts will be resolved in favor of grizzlies unless the bear involved is determined to be a nuisance.* Nuisance bears may be controlled through either relocation or removal but only if such control would result in a more natural free-ranging grizzly population and all reasonable measures have been taken to protect the bear and/or its habitat (including area closures and/or activity curtailments).

B. Management Situation 2

1. Population and habitat conditions The area lacks distinct grizzly population centers; highly suitable habitat does not generally occur, although some grizzly habitat components exist and grizzlies may be present occasionally. By definition, management situation 2 areas are those considered unnecessary for survival and recovery of the species, although the status of such areas is subject to review and change according to demonstrated grizzly population and habitat needs. Major Federal activities or programs might affect the conservation of the grizzly bear primarily in that they may contribute toward human-caused bear mortalities.
2. Management direction The grizzly bear is an important, but not the primary use on the area. Habitat maintenance and improvement, and grizzly-human conflict minimization may be, in some cases, important, but not the most important management considerations. Demonstrated grizzly populations and/or grizzly habitat use will be accommodated in other land use activities if feasible, but not the extent of exclusion of other use needs. A feasible accommodation is one of which is compatible with (does not make unobtainable) the major goals and/or objectives of other uses. Management will at least maintain those habitat conditions which resulted in the area being stratified Management Situation 2. When grizzly population and/or grizzly habitat use and other land use needs are mutually exclusive, the other land use needs may prevail in management consideration. If grizzly population and/or habitat use represents demonstrated needs that are so great (necessary to the normal needs or survival of the species or a segment of its population) that they should prevail in management considerations, then the area should be reclassified under Management Situation 1. Nuisance grizzlies will be controlled.

C. Management Situation 3

1. Population and habitat conditions Grizzly presence is possible but infrequent. Developments, such as campgrounds, resorts or other high human use associated facilities, and human presence result in conditions which make grizzly presence untenable for humans and/or grizzlies. There is a high probability that major Federal activities or programs may affect the species' conservation and recovery.
2. Management direction Grizzly habitat maintenance and improvement are not management considerations. Grizzly-human conflict minimization is a high priority management consideration. Grizzly bear presence and factors contributing to their presence will be actively discouraged. Any grizzly involved in a grizzly-human conflict will be controlled. Any grizzly frequenting an area will be controlled.

*See glossary - Page 65

D. Management Situation 4

1. Population and habitat conditions Grizzlies do not occur in the area but habitat and human conditions make the area potentially suitable for grizzly occupancy, and the area is needed for the survival and recovery of the species. The probability is very great that major Federal activities and programs may affect the species' conservation and recovery.
2. Management direction The grizzly bear is an important potential use on the area. Grizzly habitat maintenance and improvement are important management considerations. Grizzly-human conflict minimization is not a management consideration. Habitat and human conditions making the area suitable for grizzly occupancy will not be degraded pending decisions regarding reestablishment of grizzlies.

E. Management Situation 5

1. Population and habitat conditions Grizzlies do not occur, or occur only rarely in the area. Habitat may be unsuitable, unavailable, or suitable and available but unoccupied. The area lacks survival and recovery values for the species or said values are unknown. Major Federal activities and programs probably will not affect species conservation and recovery.
2. Management direction Consideration for grizzly bears and their habitat in other resource related decisions is not directed. Maintenance of grizzly habitat is an option. Any grizzly involved in a grizzly-human conflict will be controlled.

V. GRIZZLY BEAR MANAGEMENT GUIDELINES

Grizzly management guidelines for each of five resource management systems are listed for each management situation. The guidelines are grouped under the headings:

1. Maintain and Improve (NF) Habitat;
2. Minimize Grizzly-Human Conflict Potential; and,
3. Resolve Grizzly-Human Conflicts.

The heading subjects are the major grizzly management objectives.

GUIDELINES ARE SUBJECT TO CHANGE AS RESEARCH PROVIDES ADDITIONAL DATA AND/OR MANAGEMENT DIRECTIVES CHANGE.

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 1

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Wildlife Management	<p>1. Maintain close contact with research organizations to assure that current research data are being used in resource planning and administration affecting grizzlies. NF, NP.</p> <p>2. Complete a biological assessment (may use U.S. Forest Service (1977) procedures) of existing or proposed land uses (under the Recreation, Range, Timber and Fire and Minerals, Watershed and Special Uses Management Systems) which could affect grizzlies and/or their habitat. NF, NP.</p> <p>3. Initiate consultation procedures with the U.S. Fish and Wildlife Service, as necessary, if the biological assessment results in a "may affect" determination. BLM should initiate consultation related to mineral leasing. NF, NP.</p> <p>4. With full awareness of the Biological Opinion, recommend project or land use modifications which will provide compatibility between grizzly bears and other land uses without degrading conditions for grizzlies. If projects or land uses cannot be made compatible, recommend project or use elimination. NF, NP.</p> <p>5. With full awareness of the Biological Opinion, specify measures to be taken within the different resource management systems which will protect, maintain and improve (NF) grizzly bear populations and habitat. NF, NP.</p> <p>6. With full awareness of the Biological Opinion, specify measures, to be taken independent of other resource management systems, to improve grizzly bear</p>	<p>—————→ 1.*</p> <p>—————→ 2.</p> <p>—————→ 3.</p> <p>—————→ 4.</p> <p>—————→ 5.</p> <p>—————→ 6.</p>	<p>Line Officers will be provided with instructions for:</p> <p>(1) fact finding, including:</p> <ul style="list-style-type: none">(a) determination of where, why, when, and how the conflict occurred;(b) who was involved,(c) determination of status of problem bear (nuisance or nonnuisance) considering unnatural food dependency and individual bear history, see Appendix, page <p>(2) grizzly control, including names and phone numbers of personnel from state wildlife management agencies and the U.S. Fish and Wildlife Service, page 57.</p> <p>(3) live trapping;</p> <p>(4) tranquilization;</p> <p>(5) removal, including carcass disposal;</p> <p>(6) relocation, including maps of specific recommended relocation sites. Relocation plans with implications for both National Parks and National Forests will be reviewed and agreed upon by Park Service, and state wildlife management personnel. NF, NP.</p>
<p>* Arrows indicate that measures under MAINTAIN AND IMPROVE HABITAT also apply to MINIMIZE GRIZZLY-HUMAN POTENTIAL.</p>			

5

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 1

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Wildlife Management (Continued)	<p>management. For example, inform the public of National Forest and National Park grizzly bear management goals and objectives. Enlist their support in meeting these goals and objectives. NF, NP.</p> <p>7. Monitor the application of these guidelines to assure they are properly and effectively used. Recommend improvements in guidelines and application procedures. NF, NP.</p>	<p>7. Identify grizzly-human conflict potential within the different resource management systems and recommend measures to minimize conflict potential. NF, NP.</p>	
Timber and Fire Management	<p>1. All proposed logging and burning activities will be evaluated for their effects upon grizzlies and/or their habitat. U.S. Forest Service procedures (1977) may be used. NF, NP (burning) (see Wildlife Management, above).</p> <p>2. Timber sale and fire management EAR's will specify National Forest and National Park grizzly management goals and objectives and measures to meet them. Contracts will include specific measures to protect, maintain and/or improve grizzly habitat and meet grizzly management goals and objectives. Timber sale contracts will include a clause providing for cancellation of temporary cessation of activities if such are needed to resolve a grizzly-human conflict situation. Contractors' full cooperation in meeting grizzly management goals and objectives will be a condition to their receiving and holding contracts. NF, NP (burning).</p> <p>3. Logging and/or fire management activities which will adversely affect grizzly bear populations and/or their habitat will not be permitted. Adverse population effects are population reductions and/or grizzly habituation.*</p> <p>* See glossary - Page 65</p>	<p>1. →</p> <p>2. →</p> <p>3. →</p>	<p>In cases of grizzly-human conflict, District Rangers in cooperation with state wildlife management agencies will immediately identify the cause by determining where, why, when, and how the conflict occurred. If the problem bear is not determined to be a nuisance then correct the problem immediately by removing the man-related cause. Likely man-related causes are grizzly attractants and/or human activities interfering with grizzly use of habitat. Attractants include food and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, camps or other dwellings, game meat in possession of man, and transportation and/or work livestock. Interference activities are those associated with logging or burning or fire control (camps) which disrupt grizzlies, grizzly habitat and/or grizzly use of habitat. Cause removal could involve simple activity modification or temporary or permanent activity curtailment.</p> <p>If the problem bear is determined to be a nuisance and all reasonable measures have been taken to protect the bear and its habitat and a more natural grizzly population would be a likely result of its control, the U.S. Fish and Wildlife Service and state wildlife agencies will be requested to exercise control.</p> <p>See Appendix, page 57 for guidelines for determining grizzly nuisance status and for controlling nuisance grizzlies.</p>

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 1

MGMT.SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
<p>Timber and Fire Management (Continued)</p>	<p>Adverse habitat effects are reductions in habitat quantity and/or quality. NF, NP (burning).</p> <p>4. Grizzly habitat will be improved through vegetation manipulation. Silvicultural treatment, sale area improvement and managed burning are the methods to accomplish manipulation. NF.</p> <p>(a) <u>Silvicultural Treatment</u> In some habitat types (Pfister et al, 1977) in grizzly range, timber harvest, especially selection and group selection cuts and small clearcuts with no dozer piling of slash and no mechanical soil scarification, produces important amounts of herbs and shrubs bearing fruits eaten by grizzlies. Production of grizzly food species in these cuts is often greater than in uncut sites in the same habitat types. This indicates that certain timber harvest practices can be used in some forest stands to increase their grizzly food value. It also indicates that grizzly habitat quality can probably be increased or enhanced by creating openings producing high quality grizzly food facilitating greater grizzly use in forest habitat types where normal grizzly use appears light. Habitat types for possible treatment are subalpine fir/huckleberry, (ABLA/VAGL, and ALBA/VASC), spruce/horse tail (PICEA/EQAR), spruce/sweetscented bedstraw, (PICEA/GATR), and sub-alpine fir/bluejoint (ALBA/CACA).</p>	<p>4. Logging and burning activities will occur at a time or season when the area is of little or no biological importance to grizzlies. Where winter logging is infeasible, summer logging operations will be restricted in time and space to prevent significant disruptions of normal or expected grizzly activities. NF.</p>	

MANAGEMENT SITUATION: 1

MONI. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
<p>Timber and Fire Manage- ment (Continued)</p>	<p>Others may be identified through future studies. Actual site specific vegetation responses will dictate the specific type of treatment and plant association to be treated. In general, grizzly habitat management in forested cover should provide a balance of all successional stages on a sustained yield, even-flow basis.</p> <p>Composition and coverage of grizzly food sources in clearcuts which have been broadcast burned and are without extensive soil scarification are comparable to those of natural burns. This indicates that such man-made openings can become the vegetative equivalent of burns, some of which produce important grizzly foods.</p> <p>Group selection cuts and 10-20 acre irregularly shaped clearcuts, in which prescribed fire slash removal is used to duplicate wild-fire, appear desirable for creating high grizzly food producing openings. Desirable clearcut features include: (1) one or more leave or cover patches in cuts over 10 acres (2) minimum soil scarification in habitat types where soil disturbance impedes the reestablishment of grizzly foods (20 percent or less, preferably in a strip configuration), (3) slash disposal by spring broadcast burning in suitable habitat types and terrain or possibly no slash disposal and (4) protection of hydric stream bottoms, wet meadows, marshes and bogs from soil disturbance and security</p>		

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 1

Mgmt. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Timber and Fire Manage- ment (Continued)	<p>cover removal. Yarding methods should be designed to minimize soil disturbance, single end log suspension appears desirable. Access to harvest areas during and after treatment should be managed to minimize the potential for disturbance of grizzlies. Disturbance resulting from unmanaged road use could negate the habitat improvement value of man-made openings.</p> <p>(b) Sale area improvement Timber sale receipts, collected for post-sale area improvement (Knudsen-Vandenberg Act funds) should be used, when practical, to enhance the grizzly habitat quality of a logged area. Reforestation could be used to establish cover patches in cut blocks and supplemental cover screens for wet meadows, marshes, bogs, ponds, and other riparian areas. Revegetation with native grasses, forbs, and shrubs could be used to establish natural grizzly foods on appropriate, denuded sites. Riparian areas could be restored, maintained, improved, or increased through revegetation and reforestation which could favorably affect water tables and result in stream stabilization and/or water spreading.</p> <p>(c) Managed burning Some grizzlies appear to derive much of their energy from the fruits of shrubs, including huckleberry and buffaloberry. Burns resulting from wildfires in this century are important producers of fruiting shrubs which provide grizzly food energy.</p>		

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 1

MGT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Timber and Fire Manage- ment (Continued)	<p>Natural fire frequency appears necessary to maintain or expand burn components. Outside of wilderness areas, prescribed burning in habitat types which are not suitable for timber production could help to approximate a natural fire frequency. Fire management planning within wilderness areas, which would allow wildfires to burn within certain areas and conditions, would be valuable in improving habitat. Forest components known to have the greatest potential for improvement include the whitebark pine/subalpine fir, (PIAL/ABLA), and subalpine fir/huckleberry, (ABLA/VAGL and ABLA/VASC) habitat types.</p>	<p>5. Grizzly habitat enhancement through silvicultural treatment, sale area improvement or managed burning will not be done in close proximity to private property, resorts, campgrounds, summer homes, other recreation sites or areas which could bring grizzlies in contact with humans. NF.</p> <p>6. All roads used for timber sale purposes will be single purpose roads only, and will be closed to public use not associated with timber sale operation and administration. NF.</p> <p>Exceptions to this could be:</p> <p>(a) seasonal closures if data show grizzlies' use of the area to be seasonal and the road facilitates other important resource use that would not be possible without the road;</p>	
<p>5. Silviculture treatments will be designed to maintain or favor a mature, cone producing stand of whitebark pine where it exists within a sale. Generally, whitebark pine should not be marked for cutting unless it is expected to die before the next cutting entry. NF.</p>			

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 1

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Timber and Fire Management (Continued)		<p>(b) roads could be open for short periods, such as for hunting seasons and wood gathering if human use is of short duration.</p> <p>7. Timber sale operators and their employees will be informed of possible risks any time they are working in grizzly country. NF.</p> <p>8. Temporary living facilities for timber sale operators will be closely regulated. Edibles and/or garbage will not be allowed to accumulate or be available for grizzlies. Bear proof refuse containers and refuse collection to prevent overflow will be required. Requirements will be included in sale contracts. NF.</p> <p>9. In fire camps, measures will be taken to avoid attracting grizzlies. Proper food storage and refuse disposal will be required. No edibles or garbage will be left after suppression or management efforts have ended. NF,NP.</p>	
Range Management	<p>1. All livestock use on allotments, including recreation horse allotments, will be evaluated for its effect upon grizzlies and/or their habitat. U.S. Forest Service procedures (1977) may be used. NF, NP. (See Wildlife Management, above.)</p> <p>2. The allotment management plan will specify measures to meet National Forest and National Park grizzly management goals and objectives. These measures will be reflected in grazing permits and annual permittee plans. All permits will include a</p>	<p>→ 1.</p> <p>→ 2.</p>	<p>In cases of grizzly-human conflict or grizzly-livestock depredation, District Rangers in cooperation with state wildlife management agencies, will immediately identify the cause by determining where, when, why, and how the conflict occurred. If the problem bear is not determined to be a nuisance then correct the problem immediately by removing the man-related cause. Likely man-related causes are grizzly attractants and/or activities interfering with grizzly use of habitat. Attractants include foods and food odors associated with man, domestic livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, camps or other dwellings.</p>

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 1

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Range Management (Continued)	<p>clause providing for cancellation or temporary cessation of activities if such are needed to resolve a grizzly-human conflict situation. Permittees' full cooperation in meeting grizzly management goals and objectives will be a condition to their receiving and holding permits. NF, NP.</p> <p>3. The allotment management plan will specify measures to protect in time and space, food production areas vitally important to grizzlies (i.e., wet alpine and subalpine meadows, stream bottoms, aspen groves and other riparian areas) from conflicting and competing use by domestic livestock. These measures will be reflected in grazing permits and annual permittee plans. Degrees of protection could range from partial to full protection as indicated by evaluation. Measures could include, but not be limited to, closing grazing units either temporarily or permanently, exclusion fencing, changing on and off dates and setting livestock utilization rates at levels compatible with grizzly needs. Range condition class objective will be good to excellent in order to achieve range conditions favorable to grizzlies. NF, NP.</p> <p>4. On sheep allotments where grizzly-livestock depredation has been authenticated, adjustments will be made for the primary purpose of grizzly bear conservation. The following options are available:</p> <p>(a) change the season of use, bedding practices or grazing area, to avoid known problem areas or other habitat important to grizzlies in time and space.</p>	<p>→ 3.</p> <p>→ 4.</p>	<p>game meat in possession of man, and domestic and/or transportation livestock. Interference activities are domestic livestock and/or any other livestock operation activity disrupting the grizzly's natural activities in meeting its biological requirements (i.e., food use in wet areas with succulent, herbaceous vegetation which is scarce and thereby vitally important to the species especially during dry years or in late summer and autumn). Cause removal could involve simple activity modification or temporary or permanent activity curtailment in deference to seasonal or year-long grizzly use needs.</p> <p>If the problem bear is determined to be a nuisance and all reasonable measures have been taken to protect the bear and its habitat and a more natural grizzly population would be a likely result of its control, the U.S. Fish and Wildlife Service and state wildlife agencies will be requested to exercise control.</p> <p>See Appendix, page 57 for guidelines for determining grizzly nuisance status and for controlling nuisance grizzlies. NF.</p>

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 1

MOUNT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Range Management (Continued)	<p>(b) change the class of livestock from sheep to cattle if the range is suitable for cattle;</p> <p>(c) remove all livestock and close the allotment. Vacant sheep allotments will be restocked only after the allotment has been evaluated, using USFS procedures (1977) to determine grazing compatibility with grizzly habitat requirements.</p>	<p>5. The allotment management plan will specify measures for the timely removal, destruction or treatment of livestock carcasses to avoid habituation of grizzlies to livestock carrion as food. The intent is to reduce the availability of unnatural food, reduce the likelihood of food association with domestic herds and reduce opportunities for depredation. Allotment plans will require that all human and prepared livestock and pet foods and human refuse associated with livestock operations be made unavailable to grizzlies through proper storage, handling, and disposal. Edibles and/or garbage should not be allowed to accumulate; sight and/or smell of edibles and/or garbage should not be dominant (i.e., food should be canned or in other sealed containers) and edibles and/or garbage should be made unavailable (hung out of reach, secured in a solid-sided-bear-proof-structure, burned or packed out). These measures will be specified in the annual permittee plan and grazing permits. NF, NP.</p>	
<p>5. Grazing activities which will adversely affect grizzly bear populations and/or their habitat will not be permitted. Adverse population effects are population reductions and/or grizzly habituation. Adverse habitat effects are reductions in habitat quantity and/or quality. NF, NP.</p>			

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 1

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Recreation Management	<p>1. The following uses, developments or activities will be evaluated (USFS, 1977) to determine their compatibility with grizzly habitat requirements:</p> <ul style="list-style-type: none"> (a) proposed roads; (b) proposed trails (foot, horse, snowmobile and ski) and existing trails with frequent grizzly-human encounters. (c) proposed campgrounds, designated campsites, picnic areas, visitor information facilities and other facilities and structures for recreation or administrative use; (d) any or all in (c) above which exist and have a history of grizzly-human encounters; (e) existing and proposed special-use resorts, cabins, and outfitter pack and saddle stock grazing areas; (f) areas used for grazing by noncommercial recreation livestock; and (g) existing or proposed outfitter special use camps. <p>Existing or proposed activities or uses which will adversely affect grizzly populations and/or their habitat will be terminated, removed, relocated or denied. Adverse population effects are population reductions and/or grizzly habituation. Adverse habitat effects are reductions in habitat quantity and/or quality. NF, NF.</p> <p>2. All recreation oriented EAR's and concessionaire special use permits will specify measures to meet National Forest and National Park grizzly</p>	<p>1.</p> <p>2.</p>	<p>In cases of grizzly-human conflict, District Rangers, in cooperation with state wildlife management agencies, will immediately identify the cause by determining where, why, when, and how the conflict occurred. If the problem bear is not determined to be a nuisance then correct the problem immediately by removing the man-related cause. Likely man-related causes are grizzly attractants and/or human activities interfering with grizzly use of habitat. Attractants include foods and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, camps or other dwellings, game meat in possession of man, and transportation and/or domestic livestock. Interference activities are those associated with recreation activities (transportation livestock grazing, camping, trail and road access, etc.) which disrupt grizzlies, grizzly habitat and/or grizzly use of habitat. Cause removal could involve simple activity modification or temporary or permanent activity curtailment or access closure.</p> <p>If the problem bear is determined to be a nuisance and all reasonable measures have been taken to protect the bear and its habitat and a more natural grizzly population would be a likely result of its control, the U.S. Fish and Wildlife Service and state wildlife agencies will be requested to exercise control.</p> <p>See Appendix, page 57 for guidelines for determining grizzly nuisance status and for controlling nuisance grizzlies. NF.</p>

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 1

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
<p>Recreation Management (Continued)</p>	<p>management goals and objectives. Permits will include a clause providing for cancellation or temporary cessation of activities if such are needed to resolve a grizzly-human conflict situation. Permittees' full cooperation in meeting grizzly management goals and objectives will be a condition to their receiving and holding permits. NF, NP.</p> <p>3. Special care will be taken to assure that camping and/or grazing activities will not degrade or compromise important grizzly use areas (forage sites, denning areas or travel routes) NF, NP.</p> <p>4. Special care will be taken to assure that trail and road construction does not degrade important grizzly use areas. NF, NP.</p>	<p>3. In developed recreation sites, bear-proof garbage containers will be used with regularly scheduled garbage removal (to prevent overflow). All human and prepared livestock and pet food and human refuse will be made unavailable to grizzlies through proper storage, handling, and disposal as defined under Range Management, page 13. Carcasses of livestock and wildlife along major highways will be destroyed or removed immediately. To accomplish this in National Forests, District Rangers will notify State Highway Departments for removal of carcasses of animals larger than deer. NF, NP.</p> <p>4. For dispersed recreation use a "Pack-In-Pack-Out" refuse policy will be enforced. All human and prepared livestock and pet foods and human refuse will be made unavailable to grizzlies through proper storage, handling, and disposal. Carcasses of livestock and wildlife along roads and trails will be destroyed, removed, or treated as soon as practical to repel grizzlies. NF, NP.</p> <p>5. Open garbage dumps will not be permitted. NF, NP.</p>	

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 1

Mgmt. System OR Activity	Maintain and Improve Habitat	Minimize Grizzly-Human Conflict Potential	Resolve Grizzly-Human Conflicts
Recreation Management (Continued)		<p>6. Resort operators under special use will use bear-proof garbage containers and make regular collections from all containers. NF, NP.</p> <p>7. All human and prepared livestock and pet foods and human refuse associated with outfitter operations will be made unavailable to grizzlies through proper storage, handling, and disposal. A "Pack-In-Pack-Out" refuse policy will be enforced. NF, NP.</p> <p>8. Outfitters and all other hunters will be required to hang game meat at least 100 yards from camp. Game meat more than 800 yards from camp need not be hung. Meat will be hung so that the lowest portion of the carcass is suspended ten vertical feet above the highest ground object and three horizontal feet from the nearest lateral object. Suspension ropes should be tied off six feet or higher to trees or objects other than those supporting the meat pole. NF, NP.</p> <p>9. Hunters and outfitters will be encouraged to keep game meat in camp vicinity no longer than 48 hours. NF, NP.</p> <p>10. No permits will be issued for the baiting of bears for purposes of sport hunting. NF, NP.</p> <p>11. Use of established campsites will be adjusted as necessary to prevent a buildup of odors or improperly handled garbage which could attract grizzlies. NF, NP.</p>	

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 1

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Recreation Management (Continued)		<p>12. An information brochure summarizing recommended human conduct in grizzly country will be made available to the public. NF, NP.</p> <p>13. Dogs will not be permitted. NP.</p> <p>14. Feeding of bears will not be permitted. NF, NP.</p> <p>15. Signs identifying grizzly range and recommended human conduct within, will be placed at trailheads, developed campgrounds, and backcountry campsites. NF, NP.</p> <p>16. Grizzly bear trapping sites will be temporarily closed to human use. NF, NP.</p> <p>17. Trails and roads accessing areas with histories of grizzly-human encounters or areas where such encounters are probable or likely will be closed to human use either temporarily or permanently as necessary to reduce conflict potential. NF, NP.</p>	
Minerals, Watershed, and Special Uses Management	<p>1. Proposed activities referenced in application or proposals for (a) mineral, gas and oil, and geothermal exploration and development, (b) water developments, (c) new resorts and/or resort expansion, (d) all uses which require no special use permits (FSM 2708) which are likely to affect grizzlies and/or their habitat will be evaluated. U.S. Forest Service (1977) procedures may be used. NF, NP.</p>	<p>1.</p>	<p>In cases of grizzly-human conflict, District Rangers in cooperation with state wildlife management agencies, will immediately identify the cause by determining where, why, when, and how the conflict occurred. If the problem bear is not determined to be a nuisance then correct the problem immediately by removing the man-related cause. Causes are grizzly attractants and/or human activities interfering with grizzly use of habitat. Attractants include foods</p>

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 1

NGMT.SYSTE OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Minerals, Watershed and Special Uses Management (Continued)	2. All operating plans and special use permits will specify measures to meet National Forest and National Park grizzly management goals and objectives. Permits will include a clause providing for cancellation or temporary cessation of activities if such are needed to resolve a grizzly-human conflict situation. Permittees', lessees', and operators' full cooperation in meeting grizzly management goals and objectives will be a condition to their receiving and holding approved permits and plans. NF, NP.	→ 2.	and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, camps or other dwellings, game meat in possession of man, and transportation and/or work livestock. Interference activities are those associated with mining, watershed development, and special uses which disrupt grizzlies, grizzly habitat and/or grizzly use of habitat. Cause removal could involve simple activity modification or temporary or permanent activity curtailment.
	3. Activities which adversely affect grizzly bear populations and/or their habitat will not be permitted. Adverse habitat effects could result from (a) land surface disturbances, (b) water table alterations, (c) reservoirs, rights-of-way, roads pipelines, canals, transmission lines, or other structures, (d) increased human foods, and (e) reduced availability of natural foods. Areas of vital importance to grizzlies are identified through the evaluation process (USFS, 1977). NF, NP.		
	4. Operating plans and special use permits will include specific measures to protect and maintain grizzly habitat. Measures will address items a-f under 3 above, and others as necessary. NF, NP.	→ 4.	If the problem bear is determined to be a nuisance and all reasonable measures have been taken to protect the bear and its habitat and a more natural grizzly population would be a likely result of its control, the U.S. Fish and Wildlife Service and state wildlife agencies will be requested to exercise control.
	5. Mineral exploration and/or development activities will occur at a time or season when the area is of little or no biological importance to grizzlies. NF.		
			See Appendix, page 57 for guidelines for determining grizzly nuisance status and for controlling nuisance grizzlies. NF.
		5. Operation plans and special use permits will specify food storage and handling and garbage disposal standards. The general rule will be that all grizzly attractants, as defined under conflict resolution will be made unavailable to grizzlies. NF, NP.	

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 1

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Minerals, Watershed, and Special Uses Management (Continued)	<p>6. All waste water associated with drilling operations will be disposed of in a manner approved by the District Ranger. NF.</p> <p>7. Integrity of aquatic system and riparian zones will be maintained. If these areas are polluted and/or damaged from activities associated with mineral exploration and/or development, lessee will assume full responsibility for rehabilitation and restoration of such areas. NF.</p> <p>8. Roads, drilling pads, and other areas denuded from mineral exploration and development activities will be revegetated and reclaimed by lessee as directed by the District Ranger. NF.</p>	<p>6. Temporary living facilities for exploration and/or development personnel will be on-site or at an alternate site designated by the District Ranger. NF.</p> <p>7. Feeding of bears will not be permitted. NF.</p> <p>8. Reserve pits will be fenced and flagged. NF.</p> <p>9. Roads constructed for mineral exploration and/or development will be single purpose roads only and will be closed to public use not associated with mineral activities. Exception to this could be seasonal closure if data shows grizzly use of the area or habitat to be seasonal. NF.</p>	



GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 2

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Wildlife Management	<p>1. Maintain close contact with research organizations to assure that current research data are being used in resource planning and administration affecting grizzlies. NF, NP.</p> <p>2. Complete a biological assessment (may use U.S. Forest Service (1977) procedures) of existing or proposed land uses (under the Recreation, Range, Timber and Fire and Minerals, Watershed and Special Use Management Systems) which could affect grizzlies and/or their habitat. NF, NP.</p> <p>3. Initiate consultation procedures with the U.S. Fish and Wildlife Service, as necessary, if the biological assessment results in a "may affect" determination. BLM should initiate consultation related to mineral leasing. NF, NP.</p> <p>4. If grizzly population and habitat use is demonstrated, and with full awareness of the Biological Opinion, recommend project or land use modifications which will provide compatibility between grizzly bears and other land uses without degrading conditions for grizzlies. <u>If projects or land uses cannot be made compatible and grizzly needs are great (as in Management Situation 1) then recommend area be reclassified under Management Situation 1. If grizzly use does not constitute need for species survival and recovery then recommend proceeding with the activity.</u> NF, NP.</p> <p>5. In necessary cases, specify, with full awareness of the Biological Opinion measures to be taken within the different resource management systems which will protect and maintain grizzly bears and their habitat. NF, NP.</p>	<p>1.</p> <p>2.</p> <p>3.</p> <p>4.</p> <p>5</p>	<p>Line officers will be provided with instructions for:</p> <p>(1) Fact finding, including</p> <p>(a) determination of where, why, when, and how the conflict occurred</p> <p>(b) who was involved;</p> <p>(c) determination of status of problem bear (nuisance or nonnuisance) considering unnatural food dependency and individual bear history; see Appendix, page 57;</p> <p>(2) grizzly control, including names and phone numbers of personnel from state wildlife management agencies and the U.S. Fish and Wildlife Service, page 57;</p> <p>(3) live trapping;</p> <p>(4) tranquilization;</p> <p>(5) removal, including carcass disposal;</p> <p>(6) relocation, including maps of specific recommended relocation sites. Relocation plans with implications for both National Parks and National Forests will be reviewed and agreed upon by Park Service, Forest Service, and state wildlife personnel. NF, NP.</p>

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 2

Mgmt. System or Activity	Maintain and Improve Habitat	Minimize Grizzly-Human Conflict Potential	Resolve Grizzly-Human Conflicts
Wildlife Management (Continued)	<p>6. If applicable, specify feasible measures to be taken independent of other resource management systems, to improve grizzly bear management. For example, inform the public of National Forest and National Park grizzly bear management goals and objectives. Enlist their support in meeting these goals and objectives. NF, NP.</p> <p>7. Monitor the application of these guidelines to assure they are properly and effectively used. Recommend improvement in guidelines and application procedures. NF, NP.</p>	<p>→ 6.</p> <p>7. Identify grizzly-human conflict potential within the different resource management systems and recommend measures to minimize conflict potential. NF, NP.</p>	
Timber and Fire Management	<p>1. All proposed logging and burning activities will be evaluated for their effects upon grizzlies and/or their habitat. U.S. Forest Service (1977) procedures may be used. NF, NP (burning). (See Wildlife Management, above)</p> <p>2. Where grizzly population and habitat use is demonstrated, timber sale and fire management EAR's will specify National Forest and National Park grizzly management goals and objectives and measures to meet them. Contracts will include specific measures to protect, maintain and/or improve grizzly habitat and meet grizzly management goals and objectives. Timber sale contracts will include a clause providing for temporary cessation of activities if needed to resolve a grizzly-human conflict situation. Contractors' full cooperation in meeting grizzly management</p>	<p>→ 1.</p> <p>→ 2.</p>	<p>In cases of grizzly-human conflict, District Rangers in cooperation with state wildlife management agencies will immediately identify the cause by determining where, why, when, and how the conflict occurred. If the problem bear is not determined to be a nuisance then correct the problem immediately by removing, if feasible, the man-related cause. Likely man-related causes are grizzly attractants and/or human activities interfering with grizzly use of habitat. Attractants include foods and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, camps or other dwellings, game meat in possession of man, and transportation and/or work livestock. Interference activities are those associated with logging or burning or fire control (camps) which disrupt grizzlies, grizzly habitat and/or grizzly use of habitat. Cause removal could involve simple activity modification or temporary activity cessation.</p>

MANAGEMENT SITUATION: 2

MGT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Timber and Fire Management (Continued)	<p>goals and objectives will be a condition to their receiving and holding contracts. NF, NP (burning).</p> <p>3. Logging and/or fire management activities which will adversely affect grizzly bear populations and/or their habitat will, if feasible, be avoided. Adverse habitat effects are reductions in habitat quantity and/or quality. Adverse population effects are reductions and/or habituation. NF, NP (burning).</p> <p>4. Grizzly habitat improvement will generally not be a consideration. If it is, where indicated, habitat will be improved, if feasible, through vegetation manipulation. Silvicultural treatment, sale area improvement and managed burning are the methods to accomplish manipulation. NF.</p> <p>(a) <u>Silvicultural treatment</u> In some habitat types in grizzly range, timber harvest, especially selection and group selection cuts and small clearcuts with no dozer piling of slash and no mechanical soil scarification, produces important amounts of herbs and shrubs bearing fruits eaten by grizzlies. Production of grizzly food species in these cuts is often greater than in uncut sites in the same habitat types. This indicates that certain timber harvest practices can be used in some forest stands to increase their grizzly food value. It also indicates that grizzly habitat quality can probably be increased or enhanced by creating openings</p>	<p>3.</p> <p>4. Grizzly habitat improvement will generally not be a consideration. If it is, where indicated, logging and burning activities will occur at a time or season when the area is of little or no biological importance to grizzlies. Where winter logging is infeasible, summer logging operations will be restricted in time and space to prevent disruptions of grizzly activities. NF, NP.</p>	<p>If the area does not warrant reclassification under Management Situation 1 and temporary activity cessation or activity modification is not possible or does not solve the problem or if the problem bear is determined to be a nuisance, the U.S. Fish and Wildlife Service and state wildlife agencies will be requested to exercise control.</p> <p>See Appendix, page 57 for guidelines for determining grizzly nuisance status and for controlling nuisance grizzlies.</p>

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 2

Mgmt. System or Activity	Maintain and Improve Habitat	Minimize Grizzly-Human Conflict Potential	Resolve Grizzly-Human Conflicts
Timber and Fire Management (Continued)	<p>producing high quality grizzly food facilitating greater grizzly use in forest habitat types where normal grizzly use appears light. Types for possible treatment are sub-alpine fir/huckleberry, spruce/horse tail, subalpine fir/sweet-scented bedstraw, spruce/sweet-scented bedstraw, and subalpine fir/bluejoint.</p> <p>Others may be identified through future studies. Actual site specific vegetation responses will dictate the specific type of treatment and plant association to be treated. In general, grizzly habitat management in forested cover should provide a balance of all successional stages on a sustained yield, even-flow basis.</p> <p>Composition and coverage of grizzly food sources in clearcuts which have been broadcast burned and are without extensive soil scarification are comparable to those of natural burns. This indicates that such man-made openings can become the vegetative equivalents of burns, some of which produce important grizzly foods.</p> <p>Group selection cuts and 10-20 acre irregularly shaped clearcuts, in which prescribed fire slash removal is used to duplicate wildfire, appear desirable for creating high grizzly food producing openings. Desirable clearcut features include:</p>		

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 2

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Timber and Fire Manage- ment (Continued)	<p>(1) one or more leave or cover patches in cuts over 10 acres (2) minimum soil scarification in habitat types where soil disturbance impedes the reestablishment of grizzly foods (20 percent or less, preferably in a strip configuration), (3) slash disposal by spring broadcast burying in suitable habitat types and terrain, or possibly no slash disposal and (4) protection of hydric stream bottoms, wet meadows, marshes, and bogs from soil disturbance, and security cover removal. Yarding methods should be designed to minimize soil disturbance, single end log suspension appears desirable. Access to harvest areas during and after treatment should be managed to minimize the potential for disturbance of grizzlies. Disturbance resulting from unmanaged road use could negate the habitat improvement value of manmade openings.</p> <p>(b) <u>Sale Area Improvement</u> Timber sale receipts, collected for post-sale area improvement (Knudsen-Vandenberg Act funds) should be used, when practical, to enhance the grizzly habitat quality of a logged area. Reforestation could be used to establish cover patches in cut blocks and supplemental cover screens for wet meadows, marshes, bogs, ponds, and other riparian areas. Revegetation with native grasses, forbs, and shrubs could be used to establish natural grizzly foods on appropriate denuded sites. Riparian areas could be restored, maintained, improved or increased through revegetation and reforestation which could favorably affect water tables and result in stream stabilization and/or water spreading.</p>		

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 2

MGMT.SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Timber and Fire Management (Continued)	<p>(c) <u>Managed burning</u></p> <p>Some grizzlies appear to derive much of their energy from the fruits of shrubs, including huckleberry and buffaloberry. Burns resulting from wildfires in this century are important producers of fruiting shrubs which provide grizzly food energy.</p> <p>Natural fire frequency appears necessary to maintain or expand burn components. Outside of wilderness areas, prescribed burning in habitat types which are not suitable for timber production could help to approximate a natural fire frequency. Fire management planning within wilderness areas, which would allow wildfires to burn within certain areas and conditions, would be valuable in improving habitat. Forest components known to have the greatest potential for improvements include the whitebark pine/subalpine fir, and subalpine fir/huckleberry habitat types.</p>	<p>5. Grizzly habitat enhancement through silvicultural treatment, sale area improvement or managed burning will not be done in close proximity to private property, resorts, campgrounds, summer homes, other recreation sites or areas which could bring grizzlies in contact with humans. NP, NP.</p> <p>6. Roads constructed for timber sale purposes will be closed to public use not associated with the timber sale operation and administration if the road</p>	

5. Where grizzlies are a factor, silviculture treatments will be designed to maintain or favor a mature, cone producing stand of whitebark pine where it exists within a sale. Generally, whitebark pine should not be marked for cutting unless it is expected to die before the next cutting entry. NP.

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 2

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Timber and Fire Management (Continued)		<p>provides access to an important grizzly use area or a Management Situation 1 area. NF.</p> <p>Exceptions to this could be:</p> <ul style="list-style-type: none"> (a) seasonal closures if data show grizzlies' use of the important habitat or Management Situation 1 area to be seasonal; (b) roads could be open for short periods, such as for hunting and wood gathering seasons, if human use is of short duration. <p>7. Timber sale operators and their employees will be informed of possible risks any time they are working in grizzly country. NF.</p> <p>8. Where grizzly occurrence is likely, temporary living facilities for timber sale operators will be closely regulated. Edibles and/or garbage will not be allowed to accumulate or be available to grizzlies. Bear proof refuse containers and refuse collection to prevent overflow will be required. Requirements will be included in sale contracts. NF.</p> <p>9. In fire camps where grizzly occurrence is likely, measures will be taken to avoid attracting grizzlies. Proper food storage and refuse disposal will be required. No edibles or garbage will be left after suppression or management efforts have ended. NF,NP.</p>	

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 2

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Range Management	1. All livestock used on allotments, including recreation horse allotments, will be evaluated for its effect upon grizzlies and/or their habitat. U.S. Forest Service procedures (1977) may be used. (See Wildlife Management, above.) NF, NP.	→ 1.	In cases of grizzly-human conflict or grizzly-livestock depredation, District Rangers in cooperation with state wildlife management agencies, will immediately identify the cause by determining where, when, why, and how the conflict occurred. If the problem bear is not determined to be a nuisance then correct the problem immediately by removing, if feasible, the man-related cause. Likely man-related causes are grizzly attractants and/or activities interfering with grizzly use of habitat. Attractants include foods and food odors associated with man, domestic livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, camps or other dwellings, game meat in possession of man, and domestic and/or transportation livestock. Interference activities are domestic livestock and/or any other livestock operation activity disrupting the grizzly's natural activities in meeting its biological requirements (i.e., food use in wet areas with succulent, herbaceous vegetation which is scarce and therefore vitally important to the species especially during dry years or in late summer and autumn). Cause removal could involve simple activity modification or temporary activity cessation. If the area does not warrant reclassification under Management Situation 1 and temporary activity cessation or activity modification is not feasible or does not solve the problem or if the problem bear is determined to be a nuisance, the U.S. Fish and Wildlife Service and state wildlife agencies will be requested to exercise control.
	2. Where grizzly population and habitat use is demonstrated, the allotment management plan will specify feasible measures to meet National Forest and National Park grizzly management goals and objectives. The measures will be reflected in grazing permits and annual permittee plans. All permits will include a clause providing for temporary cessation of activities if needed to resolve a grizzly-human conflict situation. Permittees' full cooperation in meeting grizzly management goals and objectives will be a condition to their receiving and holding permits. NF, NP.	→ 2.	
	3. The allotment management plan will specify feasible measures to protect in time and space, food production areas important to grizzlies (i.e., wet alpine and subalpine meadows, stream bottoms, aspen groves and other riparian areas) from conflicting and competing use by domestic livestock. These measures will be reflected in grazing permits and annual permittee plans. Partial protection may be indicated by evaluation (USFS, 1977). Measures could include, but not be limited to, closing grazing units temporarily, exclusion fencing, changing on and off dates and setting livestock utilization rates at levels compatible with grizzly use. Range condition objectives will be good to	→ 3.	

See Appendix, page 57 for guidelines for determining grizzly nuisance status and for controlling nuisance grizzlies. NF.

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 2

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Range Management (Continued)	<p>excellent in order to achieve range conditions favorable to grizzlies. NF, NP.</p> <p>4. Grazing activities which will adversely affect grizzly bears and/or their habitat will, if feasible, be avoided. Adverse population effects are population reductions and/or grizzly habituation. Adverse habitat effects are reductions in habitat quantity and/or quality. Options available involving sheep grazing are:</p> <ul style="list-style-type: none"> (a) altering season of use and herding practices; (b) change livestock class from sheep to cattle; (c) temporary livestock removal. NF, NP. 	<p>4.</p> <p>5. For areas where grizzly occurrence is likely, allotment management plans will specify measures for the timely removal, destruction or treatment of livestock carcasses to avoid habituation of grizzlies to livestock carrion as food. Allotment plans will require that all human and prepared livestock and pet foods and human refuse associated with livestock operations be made unavailable to grizzlies through proper storage, handling and disposal. These measures will be specified in the annual permittee plan and grazing permits. NF, NP.</p>	
Recreation Management	<p>1. The following uses, developments or activities will be evaluated (USFS, 1977) to determine their compatibility with grizzly habitat requirements:</p> <ul style="list-style-type: none"> (a) proposed roads; (b) proposed trails (foot, horse, 	<p>1.</p>	<p>In cases of grizzly-human conflict, District Rangers in cooperation with state wildlife management agencies, will immediately identify the cause by determining where, why, when, and how the conflict occurred. If the problem bear is not determined to be a nuisance then correct the problem immediately by</p>

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 2

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
<p>Recreation Management (Continued)</p>	<p>snowmobile and ski) and existing trails with frequent grizzly-human encounters;</p> <p>(c) proposed campgrounds, designated campsites, picnic areas, visitor information facilities and other facilities and structures for recreation or administrative use;</p> <p>(d) any or all in (c) above which exist and have a history of grizzly-human encounters;</p> <p>(e) existing and proposed special-use resorts, cabins, and outfitter pack and saddle stock grazing areas;</p> <p>(f) areas used for grazing by noncommercial recreation livestock; and</p> <p>(g) existing or proposed outfitter special use camps.</p> <p>Existing or proposed activities or uses which will adversely affect grizzly bears and/or their habitat will be, if feasible, avoided. Adverse population effects are population reductions and/or grizzly habituation. Adverse habitat effects are reductions in habitat quantity and/or quality. NF, NP.</p>	<p>2.</p>	<p>removing, if feasible, the man-related cause. Likely man-related causes are grizzly attractants and/or human activities interfering with grizzly use of habitat. Attractants include foods and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, camps or other dwellings, game meat in possession of man, and transportation and/or domestic livestock. Interference activities are those associated with recreation activities (transportation livestock grazing, camping, etc.) which disrupt grizzlies, grizzly habitat and/or grizzly use of habitat. Cause removal could involve simple activity modification or temporary activity cessation. If the area does not warrant reclassification under Management Situation 1 and temporary activity cessation or activity modification is not feasible or does not solve the problem or if the problem bear is determined to be a nuisance, the U.S. Fish and Wildlife Service and state wildlife agencies will be requested to exercise control.</p> <p>See Appendix, page 57 for guidelines for determining grizzly nuisance status and for controlling nuisance grizzlies. NF.</p>
<p>2. Where grizzly population and habitat use is demonstrated, recreation oriented EAR's and concessionaire special use permits will specify feasible measures to meet National Forest and National Park grizzly management goals and objectives. Permits will include a clause providing for temporary cessation of activities if needed to resolve a grizzly-human conflict situation. Permittees' full cooperation in meeting grizzly management goals and objectives will be a condition to their receiving and holding permits. NF, NP.</p>			

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 2

Mgmt. System or Activity	Maintain and Improve Habitat	Minimize Grizzly-Human Conflict Potential	Resolve Grizzly-Human Conflicts
Recreation Management (Continued)		<p>3. In developed recreation sites where grizzly occurrence is likely, bear-proof garbage containers will be used with regularly scheduled garbage removal (to prevent overflow). All human and prepared livestock and pet food and human refuse will be made unavailable to grizzlies through proper storage, handling, and disposal. Carcasses of livestock and wildlife along major highways will be destroyed or removed immediately. To accomplish this in National Forests, District Rangers will notify State Highway Departments for removal of carcasses of animals larger than deer. NF, NP.</p> <p>4. Where grizzlies are a factor in dispersed recreation use, a Pack-In-Pack-Out refuse policy will be enforced. All human and prepared livestock and pet foods and human refuse will be made unavailable to grizzlies through proper storage, handling, and disposal. Carcasses of livestock and wildlife along roads and trails will, as soon as practical, be destroyed, removed, or treated to repel grizzlies. NF, NP.</p> <p>5. Open garbage dumps will not be permitted. NF, NP.</p> <p>6. Where grizzly occurrence is likely, resort operators under special use will use bear-proof garbage containers and make regular collections from all containers. NF, NP.</p> <p>7. Where grizzly occurrence is likely, all human and prepared livestock and pet foods and human refuse associated with outfitter operations will be made</p>	

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 2

Mgmt. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Recreation Management (Continued)		<p>unavailable to grizzlies through proper storage, handling, and disposal. A "Pack-In-Pack-Out" refuse policy will be enforced. NF, NP.</p> <p>8. Outfitters and all other hunters will be encouraged to hang game meat at least 100 yards from camp. Game meat more than 800 yards from camp need not be hung. Meat should be hung so that the lowest portion of the carcass is suspended ten vertical feet above the highest ground object and three horizontal feet from the nearest lateral object. Suspension ropes should be tied off six feet or higher to trees or objects other than those supporting the meat pole. NF, NP.</p> <p>9. Hunters and outfitters will be encouraged to keep game meat in the vicinity of camp no longer than 48 hours. NF.</p> <p>10. Permits for spring and autumn bear baiting for purposes of sport hunting will be issued with the following conditions: baits will not be permitted within one mile of any permitted camp, picnic ground, VIS center, occupied dwelling, private property, or within an area where a grizzly is known to occur. Baits must be a minimum of two miles apart and at least one quarter mile from system trails and roads, and one quarter mile from permanent streams. NF, NP.</p> <p>11. Where grizzly occurrence is likely, use of established campsites will be adjusted as necessary to prevent a buildup of odors or improperly handled garbage which could attract grizzlies. NF, NP.</p>	

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 2

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Recreation Management (Continued)		<p>12. An information brochure summarizing recommended human conduct in grizzly country will be made available to the public. NF, NP.</p> <p>13. Dogs will not be permitted. NP.</p> <p>14. Feeding of bears will not be permitted. NF, NP.</p> <p>15. Signs identifying grizzly range and recommended human conduct within, will be placed at trailheads, developed campgrounds and backcountry campsites. NF, NP.</p> <p>16. Grizzly bear trapping sites will be temporarily closed to human use. NF, NP.</p> <p>17. Temporary trail and road closure is an option which can be applied to reduce grizzly-human conflict potential. NF, NP.</p>	
Minerals, Watershed, and Special Use Management	<p>1. Proposed activities referenced in applications or proposals for (a) mineral, gas and oil, and geothermal exploration and development, (b) water developments, (c) new resorts and/or resort expansion, (d) all other special uses (FSM 2700), and (e) all uses which require no special use permits (FSM 2700) which are likely to affect grizzlies and/or their habitat will be evaluated. U.S. Forest Service (1977) procedures may be used. NF, NP.</p>	<p>→ 1.</p>	<p>In cases of grizzly human conflict, District Rangers in cooperation with state wildlife management agencies, will immediately identify the cause by determining where, why, when, and how the conflict occurred. If the problem bear is not determined to be a nuisance then correct the problem immediately by removing, if feasible, the man-related cause. Likely, man-related causes are grizzly attractants and/or human activities interfering with grizzly use of habitat. Attractants include food and food odors associated with</p>

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 2

Mgmt. System or Activity	Maintain and Improve Habitat	Minimize Grizzly-Human Conflict Potential	Resolve Grizzly-Human Conflicts
Minerals, Watershed and Special Uses Management (Continued)	<p>2. Where grizzlies are a factor, all operating plans and special use permits will specify feasible measures to meet National Forest and National Park grizzly management goals and objectives. Permits will include a clause providing for temporary cessation of activities if needed to resolve a grizzly-human conflict situation. Permittees', operators', and lessees' full cooperation in meeting grizzly management goals and objectives will be a condition to their receiving and holding approved permits and plans. NF, NP.</p> <p>3. Activities which adversely affect grizzly bear populations and/or their habitat will, if feasible, be avoided. Adverse habitat effects could result from: (a) land surface disturbances, (b) water table alterations, (c) reservoirs, rights-of-way, roads, pipelines, canals, transmission lines, or other structures, (d) increased human presence, (e) reduced availability of natural foods. Important habits will be identified through the evaluation process (USFS, 1977). NF, NP.</p> <p>4. Operating plans and special use permits will include specific feasible measures to protect and maintain grizzly habitat. Measures will address items a-e under 3 above, and others as necessary. NF, NP.</p>	<p>2.</p> <p>3.</p> <p>4. If grizzlies are a factor, operation plans and special use permits will specify food storage and handling and garbage disposal standards. The general rule will be that all attractants, as defined under conflict resolution, will be made unavailable to grizzlies. NF, NP.</p>	<p>man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, camps or other dwellings, game meat in possession of man, and transportation and/or work livestock. Interference activities are those associated with mining, watershed development and special uses which disrupt grizzlies, grizzly habitat and/or grizzly use of habitat. Cause removal could involve simple activity modification or temporary activity cessation. If the area does not warrant reclassification under Management Situation 1 and temporary activity cessation or activity modification is not possible or feasible or does not solve the problem or if the problem bear is determined to be a nuisance, the U.S. Fish and Wildlife Service and state wildlife agencies will be requested to exercise control.</p> <p>See Appendix, page 57 for guidelines for determining grizzly nuisance status and for controlling nuisance grizzlies. NF.</p>

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 3

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Wildlife Management	Grizzly habitat needs are not a consideration. NF, NP.	<ol style="list-style-type: none"> 1. Complete a biological assessment of existing or proposed land uses (under the Recreation, Range, Timber and Fire, and Minerals, Watershed and Special Uses Management Systems) which could affect grizzlies and/or their habitat. U.S. Forest Service (1977) procedures may be used. 2. Initiate consultation procedures with the U.S. Fish and Wildlife Service, as necessary, if the biological assessment results in a "may affect" determination. BLM should initiate consultation related to mineral leasing. NF, NP. 3. Identify grizzly-human conflict potential within the different resource management systems and recommend measures to minimize conflict potential. NF, NP. 	<p>Line Officers will be provided with instructions for:</p> <ol style="list-style-type: none"> (1) fact finding, including: <ol style="list-style-type: none"> (a) determination of where, why, when, and how the conflict occurred; (b) who was involved; (2) grizzly control, including names and phone numbers of personnel from state wildlife management agencies and the U.S. Fish and Wildlife Service, page 57; (3) live trapping; (4) tranquilization; (5) removal, including carcass disposal; (6) relocation, including maps of specific recommended relocation sites. Relocation plans with implications for both National Parks and National Forests will be reviewed and agreed upon by Park Service, Forest Service, and state wildlife management personnel. NF, NP.
Timber and Fire Management	Grizzly habitat needs are not a consideration. NF, NP.	<ol style="list-style-type: none"> 1. Timber sale and fire management EAR's and contracts will specify measures to meet National Forest and National Park grizzly management goals and objectives. Contractors will be required to cooperate fully in meeting these goals and objectives. NF, NP. 2. Where grizzly occurrence is likely, temporary living facilities for timber sale operators will be closely regulated. Edibles and/or garbage will not be allowed to accumulate or be available to grizzlies. Bear proof refuse containers and refuse collection to prevent overflow will be required. Requirements will be included in sale contracts. NF. 	<p>In cases of grizzly-human conflicts, District Rangers in cooperation with state wildlife management agencies will immediately identify the cause by determining where, why, when, and how the conflict occurred. Correct the problem immediately by removing the man-related cause and controlling the problem bear. Likely man-related causes are grizzly attractants. Attractants include foods and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, unsanitary camps or other dwellings and game meat in possession of man. The U.S. Fish and Wildlife Service and state wildlife agencies will be requested to exercise control. See page 57. NF.</p>

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 3

MGT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Timber and Fire Management (Continued)		3. In fire camps, measures will be taken to avoid attracting grizzlies. Proper food storage and refuse disposal will be required. No edibles or garbage will be left after suppression or management efforts have ended. NF, NP.	
Range Management	Grizzly habitat needs are not a consideration. NF.	<p>1. The allotment management plan will specify measures to meet National Forest grizzly management goals and objectives. The measures will be reflected in grazing permits and annual permittee plans. Permittees' full cooperation in meeting these goals and objectives will be a condition to their receiving and holding permits. NF, NP.</p> <p>2. The allotment management plan will specify measures for the timely removal, destruction or treatment of livestock carcasses to avoid habituation of grizzlies to livestock carrion as food. Allotment plans will also require that all human and prepared livestock and pet foods and human refuse associated with livestock operations be made unavailable to grizzlies through proper storage, handling and disposal. These measures will be reflected in grazing permits and annual permittee plans. NF, NP.</p>	In cases of grizzly-human conflict or grizzly livestock depredation, District Rangers in cooperation with state wildlife management agencies, will immediately identify the cause by determining where, when, why, and how the conflict occurred. Correct the problem immediately by removing the man-related cause and controlling the problem bear. Likely man-related causes are grizzly attractants. Attractants include foods and food odors associated with man, domestic livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, unsanitary camps or other dwellings, and game meat in possession of man. The U.S. Fish and Wildlife Service and state wildlife agencies will be requested to exercise control. See page 57. NF.

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 3

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Recreation Management	Grizzly habitat needs are not a consid- eration. NF.	<ol style="list-style-type: none"> 1. All recreation oriented EAR's and concessionaire special use permits will specify measures to meet National Forest and National Park grizzly management goals and objectives. Permittees' full cooperation in meeting these goals and objectives will be a condition to their receiving and holding permits. NF, NP. 2. In developed recreation sites, where grizzly occurrence is likely, bear-proof garbage containers will be used with regularly scheduled garbage removal to prevent overflow. All human and prepared livestock and pet foods and human refuse will be made unavailable to grizzlies through proper storage, handling, and disposal. Carcasses of livestock and wildlife along major highways will be destroyed or removed immediately. To accomplish this in National Forests, District Rangers will notify State Highway Departments to remove carcasses of animals larger than deer. NF, NP. 3. For dispersed recreation use, a "Pack-In-Pack-Out" refuse policy will be enforced. All human and prepared livestock and pet foods and human refuse will be made unavailable to grizzlies through proper storage, handling, and disposal. Carcasses of livestock and wildlife along roads and trails will be destroyed, removed, or treated to repel grizzlies as soon as practical. NF, NP. 	<p>In cases of grizzly-human conflict, District Rangers in cooperation with state wildlife management agencies, will immediately identify the cause be determining where, why, when, and how the conflict occurred. Correct the problem immediately by removing the man-related cause and controlling the problem bear. Likely man-related causes are grizzly attractants. Attractants include food and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, unsanitary camps or other dwellings and game meat in possession of man. The U.S. Fish and Wildlife Service and state wildlife agencies will be requested to exercise control. NF.</p>

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 3

MGT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Recreation Management (Continued)		<p>4. Where grizzly occurrence is likely, resort operators under special use will use bear-proof garbage containers and make regular collections from all containers. NF, NP.</p> <p>5. Permits for spring and autumn bear baiting for purposes of sport hunting will be issued with the following conditions: baits will not be permitted within one mile of any permitted camp, picnic ground, VIS center, occupied dwelling, private property or within an area where a grizzly is known to occur. Baits must be a minimum of two miles apart and at least one quarter mile from system trails and roads and one quarter mile from permanent streams. NF, NP.</p> <p>6. Feeding of bears will not be permitted. NF, NP.</p> <p>7. Open garbage dumps will not be permitted. NF, NP.</p> <p>8. All human and prepared livestock and pet foods associated with outfitter operations will be made unavailable to grizzlies through proper storage, handling, and disposal. A "Pack-In-Pack-Out" refuse policy will be enforced. NF, NP.</p> <p>9. Outfitters and hunters will be encouraged to hang game meat at least 100 yards from camp. Game meat more than 800 yards from camp need not be hung. Meat should be hung so that the lowest portion of the carcass is suspended ten vertical feet above the highest ground object and three horizontal feet from the nearest lateral object. Suspension ropes should be tied off six feet or higher to trees or objects other than those supporting the meat pole. NF, NP.</p>	

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 3

MGMT.SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Recreation Management (Continued)		<p>10. Signs identifying grizzly range and recommended human conduct within, will be placed at trailheads, developed campgrounds and backcountry campsites. NF, NP.</p> <p>11. Grizzly bear trapping sites will be temporarily closed to human use. NF, NP.</p>	
Minerals, Watershed, and Special Uses Management	Grizzly habitat needs are not a consideration. NF, NP.	<p>1. All operating plans and special use permits will specify measures to meet National Forest and National Park grizzly management goals and objectives and methods of meeting objectives. Permittees' and operators' full cooperation in meeting goals and objectives will be a condition to their receiving and holding permits and plans. NF, NP.</p> <p>2. Operation plans and special use permits will specify food storage and handling and garbage disposal standards. The general rule will be that grizzly attractants, as defined under conflict resolution, will be made unavailable to grizzlies. NF, NP.</p>	In cases of grizzly-human conflict, District Rangers in cooperation with state wildlife management agencies, will immediately identify the cause by determining, where, why, when, and how the conflict occurred. Correct the problem immediately by removing the man-related cause and controlling the problem bear. Likely man-related causes are grizzly attractants. Attractants include foods and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, unsanitary camps or other dwellings and game meat in possession of man. The U.S. Fish and Wildlife Service and state wildlife agencies will be requested to exercise control. NF.



GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 4

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Wildlife Management	1. Maintain close contact with research organizations to assure that current research data are being used in resource planning and administration affecting grizzlies. NF, NP.	→ 1.	Grizzly-human conflict resolution is not a consideration. NF.
	2. Complete a biological assessment (may use Forest Service (1977) procedures of existing or proposed land uses (under the Recreation, Range, Timber & Fire and Minerals, Watershed & Special Uses Management System) which could affect grizzlies and/or their habitat. NF, NP.	→ 2.	
	3. Initiate consultation procedures with the U.S. Fish & Wildlife Service, as necessary, if the biological assessment results in a "may affect" determination. BLM should initiate consultation related to mineral leasing. NF, NP.	→ 3.	
	4. With full awareness of the Biological Opinion, recommend project or land use modifications which would provide compatibility between grizzly bears and other land uses without degrading conditions for potential grizzly use. If projects or land uses cannot be made compatible, recommend project or use elimination. NF, NP.	→ 4.	
	5. With full awareness of the Biological Opinion, specify measures to be taken within the different resource management systems which will protect, maintain, and improve potential grizzly bear habitat. NF, NP.	→ 5.	
	6. With full awareness of the Biological Opinion, specify measures to be taken independent of other resource management systems, to improve conditions for potential grizzly populations and habitat. For example, inform	→ 6.	

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 4

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Wildlife Management (Continued)	<p>the public of National Forest and National Park grizzly bear management goals and objectives. Enlist their support in meeting these goals and objectives. NF, NP.</p> <p>7. Monitor the application of these guidelines to assure they are properly and effectively used. Recommend improvements in guidelines and application procedures. NF, NP.</p>	<p>7. Identify grizzly-human conflict potential within the different resource management systems and recommend measures to minimize conflict potential. NF, NP.</p>	
Timber and Fire Management	<p>1. All proposed logging and burning activities will be evaluated for their likely effects upon potential grizzly populations and/or their habitat. U.S. Forest Service (1977) procedures may be used. NF, NP (burning).</p> <p>2. Timber sale and fire management EAR's will specify National Forest and National Park grizzly management goals and objectives and measures to meet them. Contracts will include specific measures to protect, maintain and/or improve (NF) grizzly habitat and meet grizzly management goals and objectives. Contractors' full cooperation in meeting grizzly management goals and objectives will be a condition to their receiving and holding contracts. NF, NP (burning).</p> <p>3. Logging and/or fire management activities which will adversely affect potential grizzly bear populations and/or their habitat will not be permitted. Adverse population effects would be population</p>	<p>→ 1.</p> <p>→ 2.</p> <p>→ 3.</p>	<p>Grizzly-human conflict resolution is not a consideration. NF.</p>

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 4

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Timber and Fire Management (Continued)	<p>reductions and/or grizzly habitation. Adverse habitat effects would be reductions in habitat quantity and/or quality. NF, NP (burning).</p> <p>4. If introduction of grizzlies is likely, grizzly habitat will be improved through vegetation manipulation. Silvicultural treatment, sale area improvement and managed burning are the methods to accomplish manipulation. NF.</p> <p>(a) <u>Silvicultural treatment</u> In some habitat types in grizzly range, timber harvest, especially selection and group selection cuts and small clearcuts with no dozer piling of slash and no mechanical soil scarification, produces important amounts of herbs and shrubs bearing fruits eaten by grizzlies. Production of grizzly food species in these cuts is often greater than in uncut sites in the same habitat types. This indicates that certain timber harvest practices can be used in some forest stands to increase their grizzly food value. It also indicates that grizzly habitat quality can probably be increased or enhanced by producing high quality grizzly foods in openings in forest habitat types where food production and potential grizzly use is lower. Habitat types for possible treatment are subalpine fir/huckleberry, spruce/horsetail, spruce/sweetscented bedstraw, subalpine fir/sweetscented bedstraw, and subalpine fir/bluejoint.</p>	<p>4. Grizzly habitat enhancement through silvicultural treatment, sale area improvement or managed burning will not be done in close proximity to private property, resorts, campgrounds, summer homes, other recreation sites or areas which could bring grizzlies in contact with humans. NF.</p>	

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 4

MGT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Timber and Fire Management (Continued)	<p>Others may be identified through future studies. Actual site specific vegetation responses will dictate the specific type of treatment and plant association to be treated. In general, grizzly habitat management in forested cover should provide a balance of all successional stages on a sustained yield, even-flow basis.</p> <p>Composition and coverage of grizzly food sources in clearcuts which have been broadcast burned and are without extensive soil scarification are comparable to those of natural burns. This indicates that such man-made openings can become the vegetative equivalents of burns, some of which produce important grizzly foods.</p> <p>Group selection cuts and 10-20 acre irregularly shaped clearcuts, in which prescribed fire slash removal is used to duplicate wild-fire, appear desirable for creating high grizzly food producing openings. Desirable clearcut features include: (1) one or more leave or cover patches in cuts over 10 acres (2) minimum soil scarification in habitat types where soil disturbance impedes the reestablishment of grizzly foods (20 percent or less, preferably in a strip configuration), (3) slash disposal by spring broadcast burning in suitable habitat types and terrain, or possibly no slash disposal and (4) protection of hydric stream bottoms, wet meadows, marshes, and bogs from soil disturbance and security</p>		

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 4

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Timber and Fire Management (Continued)	<p>cover removal. Yarding methods should be designed to minimize soil disturbance, single end log suspension appears desirable. Access to harvest areas during and after treatment should be managed to minimize the potential for disturbance of grizzlies. Disturbance resulting from unmanaged road use could negate the habitat improvement value of man-made openings.</p> <p>(b) <u>Sale area improvement</u> Timber sale receipts, collected for post-sale area improvement (Knudsen-Vandenberg Act funds) should be used, when practical, to enhance the grizzly habitat quality of a logged area. Reforestation could be used to establish cover patches in cut blocks and supplemental cover screens for wet meadows, marshes, bogs, ponds, and other riparian areas. Revegetation with native grasses, forbs, and shrubs could be used to establish natural grizzly foods on appropriate, denuded sites. Riparian areas could be restored, maintained, improved, or increased through revegetation and reforestation which could favorably affect water tables and result in stream stabilization and/or water spreading.</p> <p>(c) <u>Managed burning</u> Some grizzlies appear to derive much of their energy from the fruits of shrubs, including huckleberry and buffaloberry. Burns resulting from wildfires in this century are important producers of fruiting shrubs which provide grizzly food energy.</p>		

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 4

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
<p>Timber and Fire Management (Continued)</p>	<p>Natural fire frequency appears necessary to maintain or expand burn components. Outside of wilderness areas, prescribed burning in habitat types which are not suitable for timber production could help to approximate a natural fire frequency. Fire management planning within wilderness areas, which would allow wildfires to burn within certain areas and conditions, would be valuable in improving habitat. Forest components known to have the greatest potential for improvement include the whitebark pine/subalpine fir, and subalpine fir/huckleberry habitat types.</p> <p>5. Silviculture treatments will be designed to maintain or favor a mature cone producing stand of whitebark pine where it exists within a sale. Generally, whitebark pine should not be marked for cutting unless it is expected to die before the next cutting entry. NF.</p>	<p>5.</p> <p>6. All roads used for timber sale purposes will be single purpose roads only, and will be closed to public use not associated with the timber sale operation and administration if the road provides access to a Management Situation 1 area. NF.</p> <p>Exceptions to this could be:</p> <p>(a) Seasonal closures if data show grizzlies' use of the Management Situation 1 area to be seasonal.</p> <p>(b) Roads could be open for short periods, such as for big game seasons in the fall, if human use is of short duration.</p>	

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 4

Mgmt. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Range Management	<p>1. All livestock use on allotments including recreation horse allotments, will be evaluated for its effect upon grizzly habitat. U.S. Forest Service (1977) procedures may be used. NF, NP.</p> <p>2. The allotment management plans will specify measures to meet National Forest and National Park grizzly management goals and objectives. These measures will be reflected in grazing permits and annual permittee plans. Permittees' full cooperation in meeting grizzly management goals and objectives will be a condition to their receiving and holding permits. NF, NP.</p> <p>3. The allotment management plan will specify measures to maintain food production areas of potential importance to grizzlies (i.e., wet alpine and subalpine meadows, stream bottoms, aspen groves and other riparian areas). These measures will be reflected in grazing permits and annual permittee plans. Measures could include, but not be limited to, closing grazing units temporarily, exclusion fencing, and setting livestock utilization rates at levels compatible with potential grizzly needs. Range condition class objectives will be good to excellent to achieve range conditions favorable to grizzlies. NF, NP.</p> <p>4. Grazing activities which would adversely affect grizzly bear populations and/or their habitat will not be permitted. Adverse population effects would be population reductions</p>	<p>1.</p> <p>2.</p> <p>3.</p> <p>4.</p>	Grizzly-human conflict resolution is not a consideration. NF.

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 4

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Range Management (Continued)	and/or grizzly habitation. Adverse habitat effects would be reductions in habitat quantity and/or quality. NF, NP.		
Recreation Management	<p>1. The following uses, developments or activities will be evaluated (USFS, 1977) to determine their compatibility with grizzly habitat requirements:</p> <ul style="list-style-type: none"> (a) proposed roads; (b) proposed trails (foot, horse, snowmobile, and ski); (c) proposed campgrounds, designated campsites, picnic areas, visitor information facilities and other facilities and structures for recreation or administrative use; (d) existing and proposed special-use resorts, cabins, and outfitter pack and saddle stock grazing areas; (e) areas used for grazing noncommercial recreation livestock, and; (f) existing or proposed outfitter special use camps. <p>Existing or proposed activities or uses which would adversely affect grizzly populations and/or their habitat will be terminated, removed, relocated or denied. Adverse population effects would be population reductions and/or grizzly habitation. Adverse habitat effects would be reductions in habitat quantity and/or quality. NF, NP.</p>	<p>1. →</p>	Grizzly-human conflict resolution is not a consideration. NF.

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 4

MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Recreation Management (Continued)	<p>2. All recreation oriented EAR's and concessionaire special use permits will specify measures to meet National Forest and National Park grizzly management goals and objectives. Permittees' full cooperation in meeting grizzly management goals and objectives will be a condition to their receiving and holding permits. NF, NP.</p> <p>3. Special care will be taken to assure that camping and/or grazing activities will not degrade or compromise important potential grizzly use areas (forage sites, denning areas or travel routes). NF, NP.</p> <p>4. Special care will be taken to assure that trail and road construction does not degrade important potential grizzly use areas. NF, NP.</p>	<p>→ 2.</p> <p>→ 3.</p> <p>→ 4.</p>	
Minerals, Watershed, and Special Uses Management	<p>1. Proposed activities referenced in applications or proposals for (a) mineral, gas and oil, and geothermal exploration and development, (b) water developments, (c) new resorts and/or resort expansion, (d) all other special uses (FSM 2700), and (e) all uses which require no special use permits (FSM 2708) which would likely affect grizzlies and/or their habitat will be evaluated using U.S. Forest Service (1977) procedures. NF, NP.</p> <p>2. All operating plans and special use permits will specify measures to meet National Forest and National Park</p>	<p>→ 1.</p> <p>→ 2.</p>	Grizzly-human conflict resolution is not a consideration. NF.

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION: 4

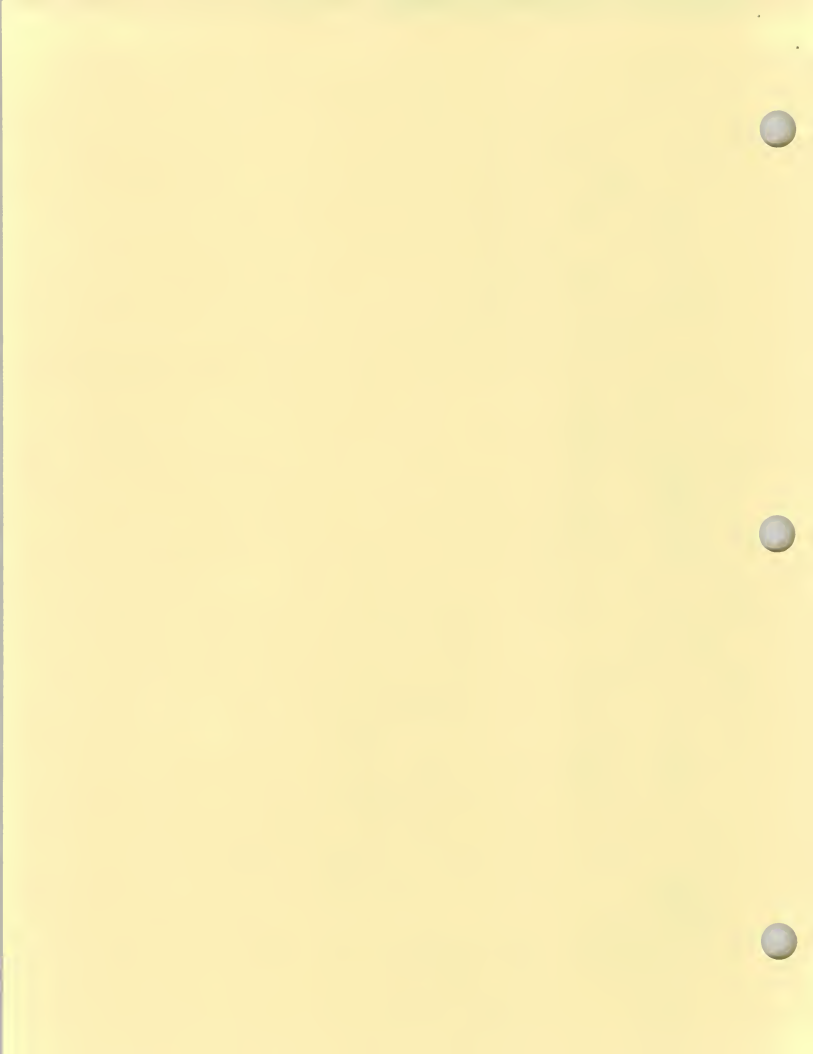
MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
Minerals, Watershed, and Special Uses Management (Continued)	<p>grizzly management goals and objectives. Permittees' and operators' full cooperation in meeting grizzly management goals and objectives will be a condition to their receiving and holding approved permits and plans. NF, NP.</p> <p>3. Activities which would adversely affect grizzly bear populations and/or their habitat will not be permitted. Adverse population and habitat effects could result from: (a) land surface disturbances, (b) water table alterations, (c) reservoirs, rights-of-way, roads, pipelines, canals, transmission lines, or other structures, (d) increased human presence, (e) loss of natural foods, and (f) reduced availability of natural foods. Areas of vital potential importance are identified through the evaluation process (USFS, 1977). NF, NP.</p> <p>4. Operating plans and special use permits will include specific measures to protect and maintain potential grizzly habitat. Measures will address items a-f under 3 above, and others as necessary. NF, NP.</p>	<p>→ 3.</p> <p>→ 4.</p>	

GRIZZLY BEAR MANAGEMENT GUIDELINES

MANAGEMENT SITUATION:

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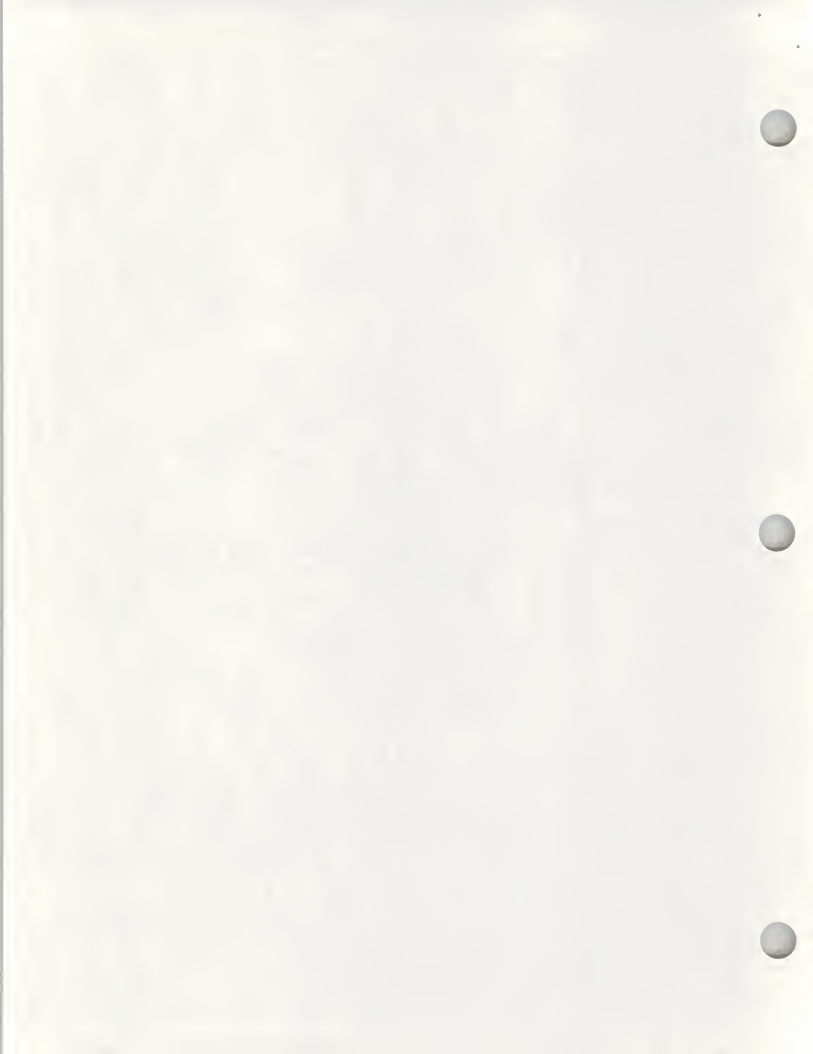
MGMT. SYSTEM OR ACTIVITY	MAINTAIN AND IMPROVE HABITAT	MINIMIZE GRIZZLY-HUMAN CONFLICT POTENTIAL	RESOLVE GRIZZLY-HUMAN CONFLICTS
All Management Systems and Activities	Grizzly habitat needs are not a necessary consideration. Maintenance of suitable and available but unoccupied habitat is an option. If taken, direction under MAINTAIN AND IMPROVE HABITAT, SITUATION 4, for all management systems and activities would apply. NF, NP.	Minimizing grizzly-human conflict is not a consideration. NF, NP. In the rare event that grizzlies occur in the area, no action is necessary unless conflict is imminent. If conflict is imminent, proceed as indicated under conflict resolution.	If grizzly-human conflict occurs, District Rangers in cooperation with state wildlife management agencies will immediately identify the cause by determining where, why, when, and how the conflict occurred. Correct the problem immediately by removing the man-related cause and controlling the problem bear. Likely man-related causes are grizzly attractants. Attractants include food and food odors associated with man, livestock carrion, garbage, garbage dumps, prepared livestock and pet foods, unsanitary camps or other dwellings and game meat in possession of man. The U.S. Fish and Wildlife Service and state wildlife agencies will be requested to exercise control. See page 57. NF.



LITERATURE CITED

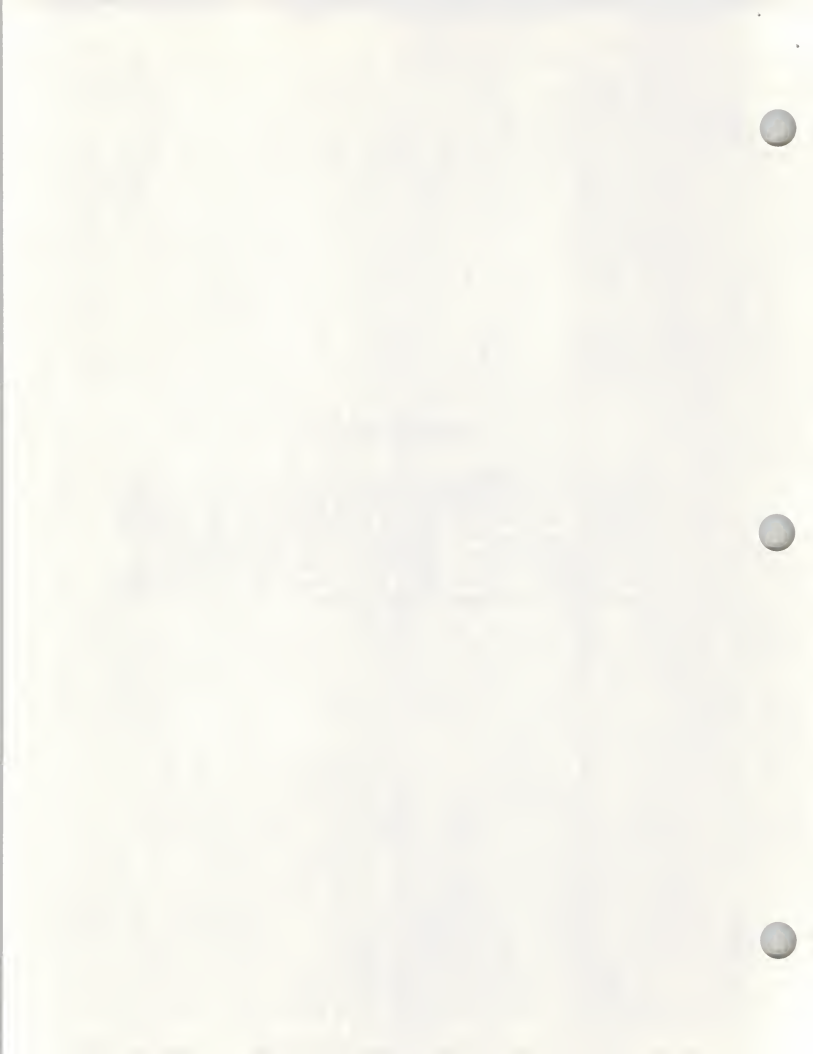
Pfister, R.D., B. Kovalchik, S. Arno and R. Presby. 1977. Forest Habitat Types of Montana. USDA Forest Service Gen. Tech. Rep. INT-34, 174 p. Intermountain Forest and Range Experiment Station, Ogden, Utah 88401

U.S. Forest Service. 1977. Method for Determining Grizzly Bear Habitat Quality and Estimating Consequences of Impacts on Grizzly Habitat Quality. Prepared by Stephen P. Mealey. Northern Region Contract No. 11-1200. Missoula, Montana. Multilith. 47 pp.



DOCUMENT PREPARATION

This document has been in various stages of development since 1975. As a result, many individuals, have contributed significantly to its final form. The Shoshone National Forest was the lead unit in preparation of the guidelines. Specific management measures were developed in close consultation with the Interagency Grizzly Bear Study Team and the various National Park, National Forest, Fish and Wildlife Service and State wildlife agency units involved. Collation, editing, and writing which resulted in the final document were done by Stephen P. Mealey, Wildlife Biologist, Shoshone National Forest.



A P P E N D I X

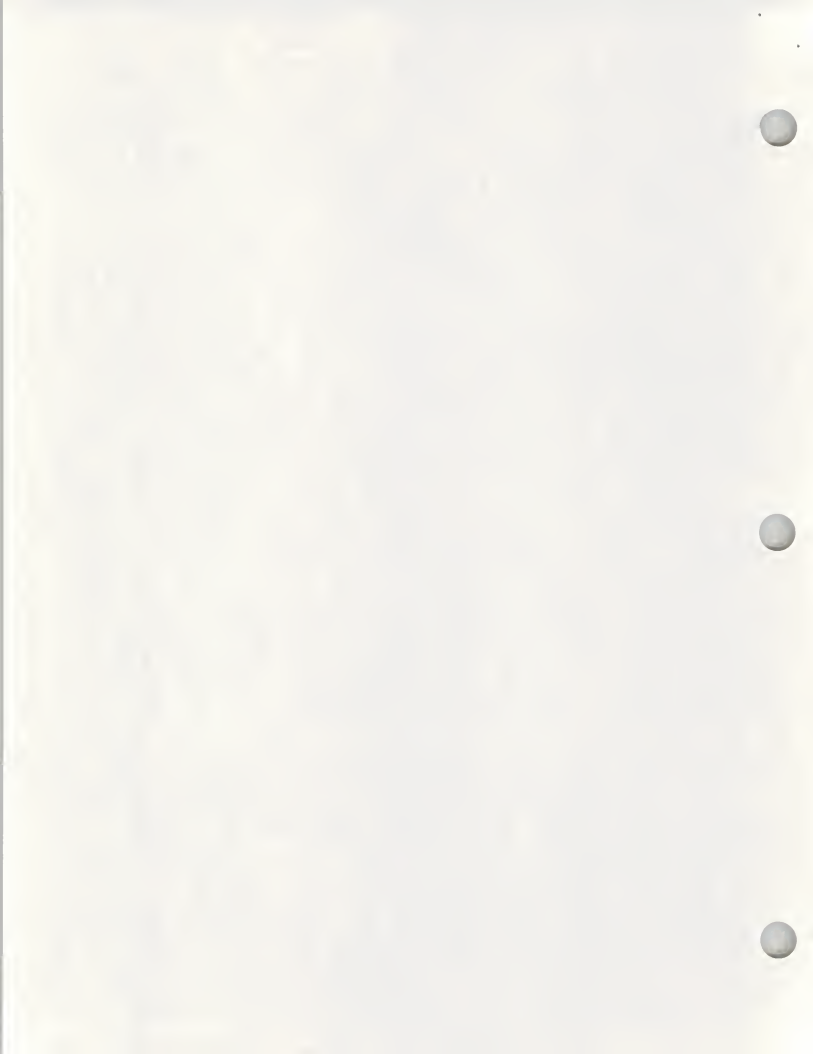




FIGURE 1.
GREATER YELLOWSTONE AREA
ADMINISTRATIVE UNITS

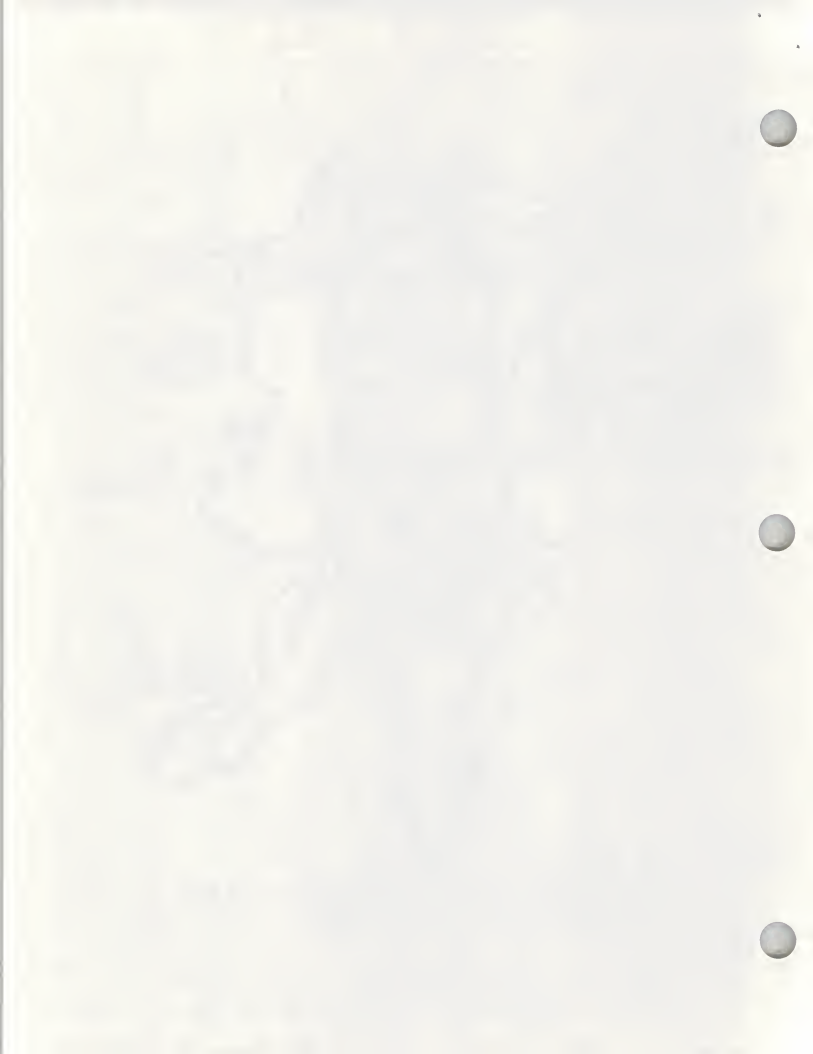




Figure 2. General representation of management situation areas in National Forests and National Parks in the Greater Yellowstone area.

(Detailed delineations are available at the respective agency's headquarters, see page 136).



Appendix 3

INTERAGENCY AGREEMENT FOR MANAGEMENT INVOLVING GRIZZLY BEARS IN THE GREATER YELLOWSTONE AREA, FOR DETERMINING GRIZZLY BEAR NUISANCE STATUS AND FOR CONTROLLING NUISANCE GRIZZLY BEARS ON NATIONAL FOREST LAND

THIS INTERAGENCY AGREEMENT is made and entered into, by and among the following agencies: the Montana and Idaho Fish and Game Departments and the Wyoming Game and Fish Department, hereinafter referred to as the Departments; Regions One, Two, and Four, Forest Service, U.S. Department of Agriculture, hereinafter referred to as the Forest Service; Region One and Six, Fish and Wildlife Service, U.S. Dept. of Interior hereinafter referred to as the Fish and Wildlife Service; and Yellowstone and Grand Teton National Parks, U.S. Department of Interior, hereinafter referred to as the Park Service.

WITNESSETH:

WHEREAS, it is mutually recognized that it is necessary to:

- A. Comply with Section 7 of the Endangered Species Act which requires Federal agencies to protect the grizzly bear (*Ursus arctos horribilis*) a threatened species, and its habitat.
- B. Comply with Fish and Wildlife Service rules and regulations relating to the removal of nuisance bears (FEDERAL REGISTER, Vol. 40, No. 145 - Monday, July 28, 1975).
- C. Comply with Fish and Wildlife Service rules and regulations relating to interagency cooperation under the Endangered Species Act with emphasis on formal consultation related to management actions affecting grizzly bears (FEDERAL REGISTER, Vol. 43, No. 2 - Wednesday, January 24, 1978).
- D. Identify the responsibilities of the respective agencies for determining grizzly bear nuisance status and for controlling nuisance grizzly bears on National Forest land.
- E. Provide a mutually developed and mutually acceptable plan which contains a uniform interagency approach for management of grizzly bears and their habitat and for determining grizzly bear nuisance status and for controlling nuisance grizzlies.
- F. Provide for an Aggregate Consultation on all management actions related to grizzly bears specified in the Guidelines For Management Involving Grizzly Bears In The Greater Yellowstone Area, hereinafter referred to as the "Guidelines" and in the Plan For Determining Grizzly Bear Nuisance Status And For Controlling Nuisance Grizzly Bears On National Forest Land, hereinafter referred to as the "Plan."

NOW, THEREFORE, in consideration of the above premises, the parties hereto agree as follow:

- A. To accept the "Guidelines" as the primary source for management decisions involving grizzly bears and their habitat in the area shown in Figure 2, page 53.
- B. The Forest Service, as the public land administering agency on National Forests, shall:

Coordinate all actions on National Forest lands, relating to the determination of grizzly bear nuisance status and controlling nuisance grizzly bears. Coordination means requesting assistance and participation of the Fish and Wildlife Service (Animal Damage Control), the Departments, and, in some cases, the Park Service. The Forest Service shall not determine grizzly bear nuisance status or control nuisance grizzly bears without the assistance and participation of the Fish and Wildlife Service and the Departments. The Forest Supervisors, through the District Rangers, shall be responsible for action initiation.

- C. The Fish and Wildlife Service, (Animal Damage Control) as advisor to the Forest Service in matters pertaining to fish and wildlife management, shall:

In those cases when the Fish and Wildlife Service is aware of the grizzly-human conflict situation first, initiate the coordination process by notifying the Forest Service and otherwise participate, upon request from the Forest Service, in the determination of grizzly bear nuisance status, and shall provide necessary expertise and operational services required for the control of nuisance grizzly bears on National Forest Land.

- D. The Departments as the agencies responsible for the management of the States' wildlife resources, shall:

In those cases when the Departments are aware of the grizzly-human conflict situation first, initiate the coordination process by notifying the Forest Service and otherwise participate, upon request from the Forest Service, in the determination of grizzly bear nuisance status and shall contribute necessary expertise, operational services or other acceptable methods for the control of nuisance grizzly bears on National Forest land.

- E. The Park Service, as the agency responsible for the management and administration of all resources in the National Parks shall:

Govern the taking of grizzly bears in National Parks. Yellowstone National Park may accept nuisance grizzlies judged to be suitable for relocation, except for bears habituated to the use of human food or garbage or those with a history of aggressive (not defensive) behavior toward man. Park Service personnel shall be invited to participate in the determination of grizzly bear nuisance status and to participate in the relocation of those bears judged to be potentially suitable for relocation to Yellowstone Park.

- F. It is Mutually Agreed and Understood By and Among the Said Parties that:

1. All signatory agencies will participate in an annual meeting to be held no later than April 30 each year. The purpose of the meeting will be to review and revise, as needed, this Agreement, the "Guidelines" and "Plan."
2. All agencies will exchange lists of designated representatives assigned to implement the provisions of this Agreement. This will be renewed at the annual meeting.
3. All agencies will make an effort to have National Forest permittees notify the Forest Service of any grizzly bear associated problems and to notify the respective State Wildlife Agencies when property damage occurs.
4. Amendments to this Agreement and Plan may be made at any time with written concurrence of all signatory agencies and appropriate consultation.
5. Each agency signatory hereto will coordinate its respective grizzly bear control procedures in full accordance with this Agreement and Plan.
6. This Agreement and Plan will become effective on the date the final signature is affixed hereto. This Agreement and Plan shall automatically be renewed annually and remain in force until revoked or amended.
7. Any signatory agency may terminate participation in this Agreement and Plan upon 120 days notice to each of the other signatory agencies.
8. The attached Plan provides operational guidelines for determining grizzly bear nuisance status and for controlling nuisance grizzly bears on National Forest land.
9. The "Guidelines" and "Plan" will be submitted to the Fish and Wildlife Service as a Formal Aggregate Consultation since the projects, activities, and programs are logically grouped, their effects should be similar and such an Aggregate Consultation should greatly economize consultation activities related to and required for grizzly bear management.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the last date written below.

U.S. FISH AND WILDLIFE SERVICE

By /s/ William H. Meyer Date 7/15/80
Acting Regional Director, R-1

By /s/ Don W. Minnich Date 6/24/80
Regional Director, R-6

NATIONAL PARK SERVICE

By /s/ Lorraine Mintzmyer Date June 16, 1980
Regional Director

WYOMING GAME AND FISH DEPARTMENT

By /s/ Earl M. Thomas Date 7/22/80
State Game and Fish Director

MONTANA FISH AND GAME DEPARTMENT

By /s/ Fletcher E. Newby Date 5/1/80
Acting State Fish and Game Director

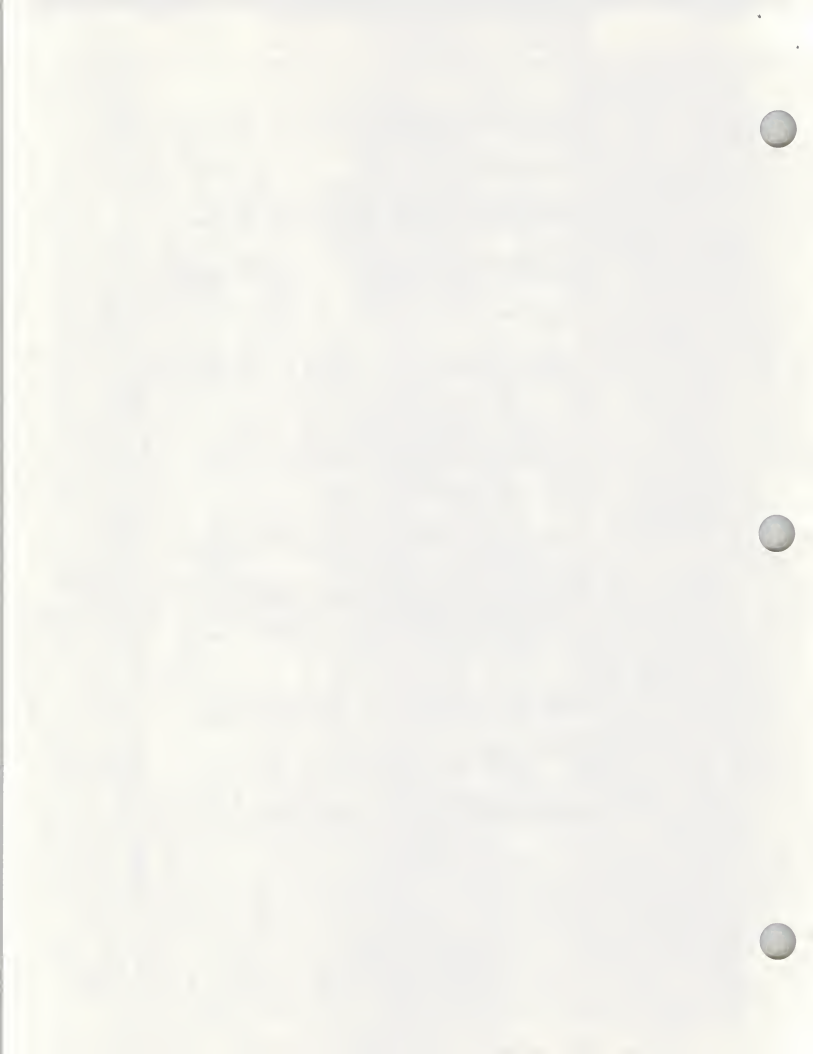
IDAHO FISH AND GAME DEPARTMENT Approved as to content and form
BY /s/ Stephen Goddard Date 5/23/80
Deputy Attorney General
By /s/ Robert L. Salter Date 5/23/80
State Fish and Game Director

U.S. FOREST SERVICE

By /s/ Everett Towle Date 7/2/80
Regional Forester, R-1

By Craig W. Rupp Date 1/21/81
Regional Forester, R-1

By /s/ Jeff M. Sirmon Date 5/21/80
Acting Regional Forester, R-4



Appendix 4

PLAN FOR DETERMINING
GRIZZLY BEAR NUISANCE STATUS
AND FOR CONTROLLING NUISANCE
GRIZZLY BEARS ON NATIONAL
FOREST LAND

See pages 606-607
for current list
of contacts.

Appendix to Guidelines for Management Involving
Grizzly Bears in the Greater Yellowstone Area

and

Interagency Agreement For Management Involving Grizzly Bears
In The Greater Yellowstone Area, For Determining Grizzly Bear
Nuisance Status And For Controlling Nuisance Grizzly Bears
On National Forest Land

I. Designated Representatives

The following designated representatives will implement some provisions of the
"Guidelines" and the Interagency Agreement provisions through these Plan Guidelines.
Representatives for the period from the effective date, 1980 - April 30, 1981, are:

U.S. Fish and Wildlife Service

Name: _____ Phone: _____ Address: _____

National Park Service (Yellowstone National Park)

Name: _____ Phone: _____ Address: _____

National Park Service (Grand Teton National Park)

Name: _____ Phone: _____ Address: _____

Wyoming Game and Fish Department

Name: _____ Phone: _____ Address: _____

Montana Fish and Game Department

Name: _____ Phone: _____ Address: _____

Idaho Fish and Game Department

Name: _____ Phone: _____ Address: _____

U.S. Forest Service (Shoshone National Forest)

Name: _____ Phone: _____ Address: _____

(Cuater National Forest)

Name: _____ Phone: _____ Address: _____

(Gallatin National Forest)

Name: _____ Phone: _____ Address: _____

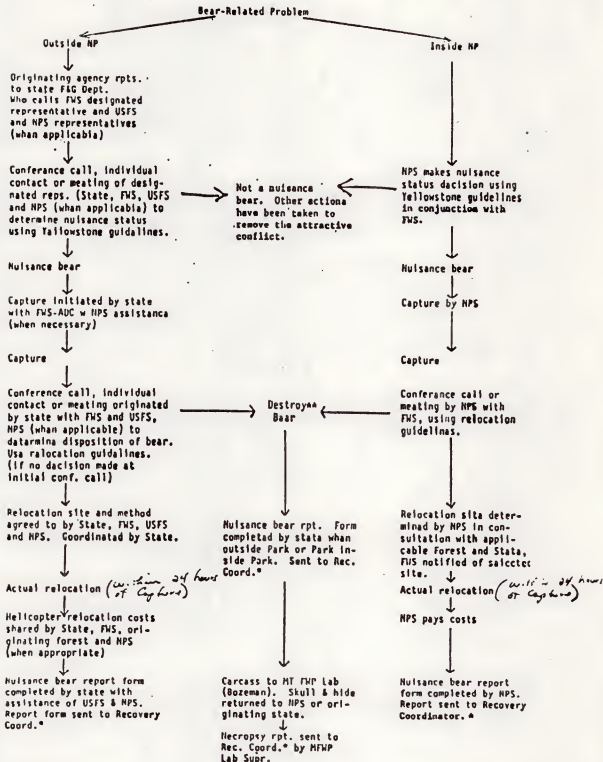
(Bridger-Teton National Forest)

Name: _____ Phone: _____ Address: _____

(Targhee National Forest)

Name: _____ Phone: _____ Address: _____

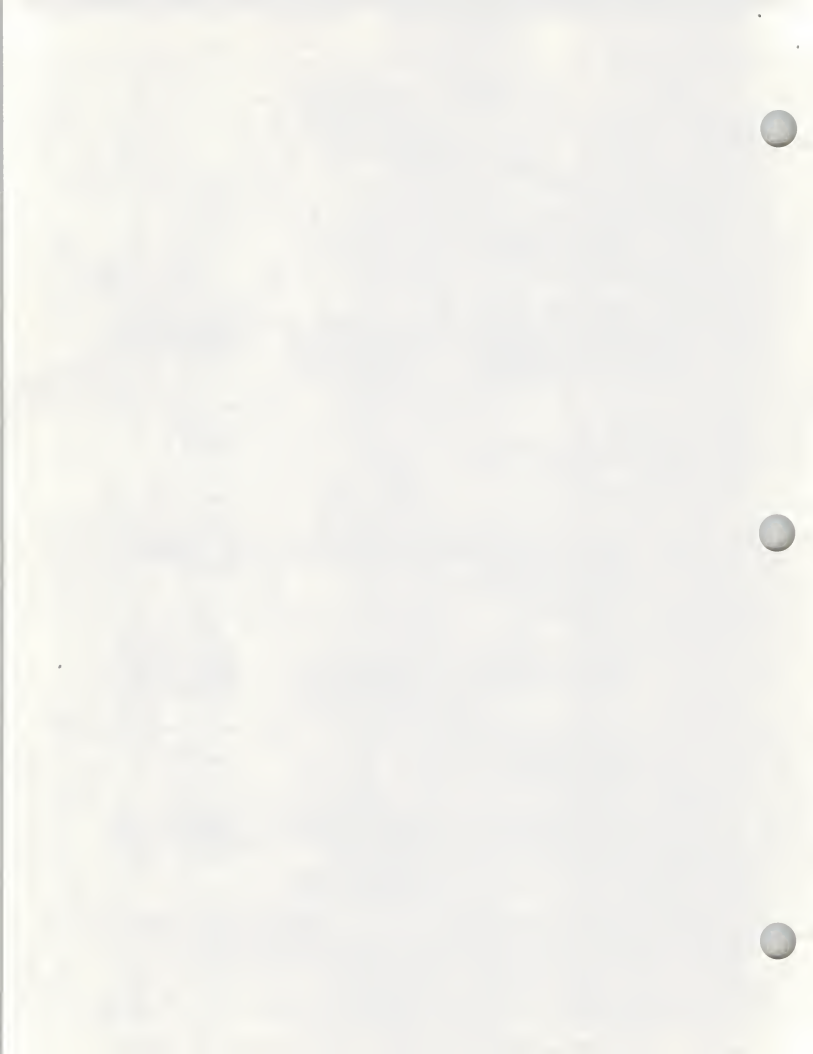
**ACTION PROCEDURES FOR DETERMINING BEAR NUISANCE
STATUS AND MANAGEMENT ACTION**



*Recovery Coordinator distributes report to agency representatives in Ecosystem.

*Chiefly Bear Recovery Coordinator, USFWS, HS 105D, University of MT, Missoula, MT 59812

**Alternative may include transport to zoo or research. Decision made at second phone call.



II. Guidelines for Determining Grizzly Bear Nuisance Status

These guidelines apply to the Management Situation Areas defined in Guidelines for Management Involving Grizzly Bears in the Greater Yellowstone Area (USFS, 1978). In Management Situation Areas 1 and 2, grizzlies must be determined to be a nuisance by specific criteria before they can be controlled. In Situation Areas 3 and 5, any grizzly involved in a grizzly-human conflict situation is considered a nuisance and will be controlled. Control must be compatible with Recovery Plan objectives for limiting man-caused grizzly mortality.

In Management Situation 1 areas, a grizzly bear will be determined to be a nuisance if either or both of the following conditions apply:

- A. the bear uses unnatural food materials (human and livestock foods, garbage, livestock carrion and game meat in the possession of man) which have been reasonably secured from the bear, resulting in habituation of the bear and/or human injury or loss of human life;
- B. the bear has a history of aggressive (not defensive) behavior toward man which constitutes a demonstrable immediate or potential threat to human safety.

The following are considerations in determining grizzly nuisance status under condition A.

1. Unnatural foods were reasonably secure from grizzlies. Reasonably secure means all steps were taken to comply with guideline objectives a) Maintain and Improve Habitat and b) Minimize Grizzly-Human Conflict Potential listed under Management Situation 1. The following are examples of reasonably secure conditions:
 - a) edibles and/or garbage was not allowed to accumulate; sight and/or smell of edibles and/or garbage was not dominant (i.e., food was canned or in other sealed containers) and edibles and/or garbage was made unavailable (hung out of reach or secured in a solid-sided-bear-proof-structure). Livestock use did not occur in habitat components critically important to grizzlies in time or space;
 - b) livestock and wildlife carcasses were destroyed or treated so that the material would not reasonably be expected to attract grizzlies;
 - c) game meat was stored at least 100 yards from any camp area;
 - d) no baits were placed for purposes of sport hunting black bears;
2. Any human injury or loss of human life occurred as a result of a nondefensive grizzly attack.

The following are considerations in determining grizzly nuisance status under condition B:

The bear has a history of aggression toward man. Sound evidence must be available to establish that the problem bear acted aggressively without provocation (not defensively), and that such behavior constituted a threat to human safety, and that injury or death were the direct result of a grizzly attack.

If information is insufficient to clearly establish facts 1. and 2., under condition A., the problem grizzly probably should not be determined a nuisance under that condition. If information is insufficient to clearly establish fact 1., under condition B, the problem grizzly probably should not be determined a nuisance under that condition.

In Management Situation 2 areas, a grizzly bear will be determined to be a nuisance if either or both of the following conditions apply:

- A. the bear uses unnatural food materials (human and livestock foods, garbage, livestock, livestock carrion and game meat) which have been reasonably and feasibly secured from the bear, resulting in habituation of the bear and/or human injury or loss of human life or significant loss of property;
- B. the bear has a history of aggressive (not defensive) behavior toward man which constitutes a demonstrable immediate or potential threat to human safety.

The following are considerations in determining grizzly nuisance status under condition A:

1. unnatural foods were reasonably secure from grizzlies. Reasonably secure means: all feasible steps were taken to comply with guideline objectives a) Maintain and Improve Habitat and b) Minimize Grizzly-Human Conflict Potential listed under Management Situation 2;
2. any human injury or loss of human life occurred or property losses were significant as a result of a nondefensive grizzly attack. For livestock on permitted use, a significant loss is two percent of the permitted number. Other losses are significant if property damage is recurrent and exceed \$500.00 per individual. Under particular circumstances a grizzly may be considered a nuisance if livestock losses or property damage is expected to the immediate resource and other solutions are unavailable and a control action would be in the best interest of the bear or bears.

The following are considerations in determining grizzly nuisance status under condition B:

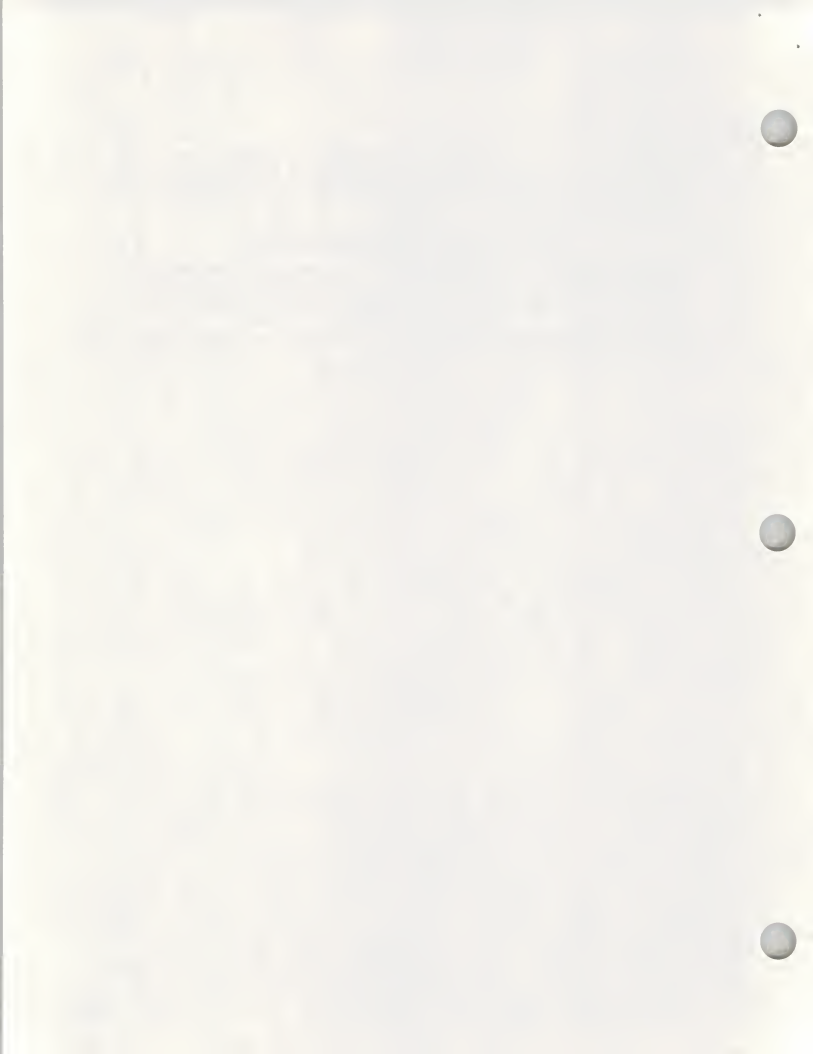
The bear has a history of aggression toward man. Sound evidence must be available to establish that the problem bear has acted aggressively without provocation (not defensively), and that such behavior constituted a threat to human safety, and that injury or death were the direct result of a grizzly attack.

If information is insufficient to clearly establish facts 1. and 2. under condition A., the problem grizzly probably should not be determined a nuisance under that condition. If information is insufficient to clearly establish fact 1., under condition B. the problem grizzly probably should not be determined a nuisance under that condition.

III. Guidelines for Controlling Nuisance Grizzly Bears

Grizzlies determined to be nuisances under the criteria of II above, and all grizzlies in Management Situation Areas 3 and 5 involved in a grizzly-human conflict situation will be controlled, as long as such control is compatible with Recovery Plan objectives for limiting man-caused grizzly mortality.

The criteria in Table 1 and in Figure 2 should be used to guide control actions.



UNITED STATES GOVERNMENT

Memorandum

TO : GRIZZLY BEAR MANAGERS, YELLOWSTONE AREA DATE: 4/12/84

FROM : CHRIS SERVHEEN , USFWS, GRIZZLY BEAR RECOVERY COORDINATOR

SUBJECT: UPDATED PHONE CONTACT LIST AND NUISANCE BEAR PROCEDURES FLOW SHEET

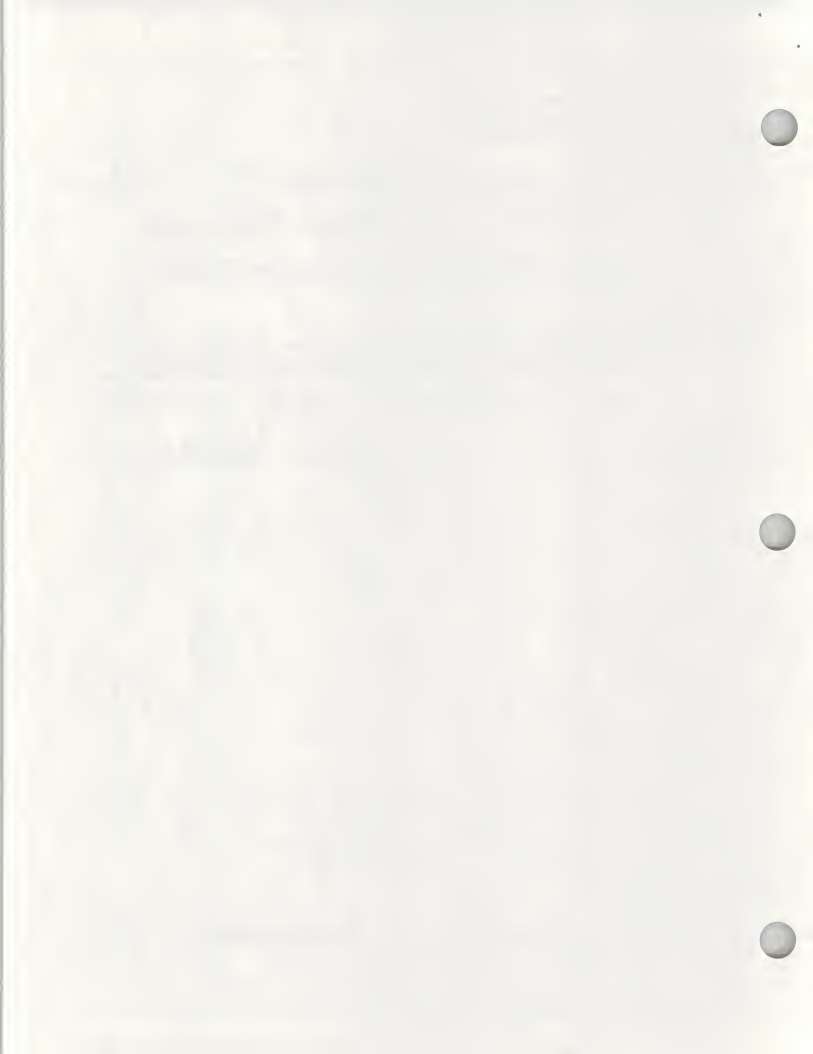
Enclosed is an updated master phone contact list and a flow sheet for handling nuisance bears as agreed to at the 1984 Yellowstone Guidelines meeting in Bozeman on March 12-14 1984.

Thank you for your cooperation in implementing the Yellowstone Guidelines.

Chris Servheen



Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan



INTERAGENCY AGREEMENT FOR DETERMINING GRIZZLY BEAR
NUISANCE STATUS AND FOR CONTROLLING NUISANCE GRIZZLY BEARS

Designated Representatives

The following designated representatives are authorized as agency contacts to determine nuisance grizzly bear status and relocation plans as per the attached flow chart. Representatives for the period from April 4, 1984 to April 30, 1985, are:

*Primary contact to be called first.

U.S. Fish and Wildlife Service

	Office	Home
*Chris Servheen (All states)	FTS 585-3223 (406)329-3223	(406)721-1488
*ayne Brewster (MT & WY)	FTS 585-5225 (406)449-5225	(406)443-7348
Joe Carr (ID & WA)	FTS 554-1806 (208)334-1806	(208)362-2325

Info Contacts by National Forest Where Problem Occurs

Panhandle National Forest

*David Neider	(208)664-9236	(208)773-3963
Pete Printz	(208)664-9236	(208)667-6017

Clearwater or Nez Perce National Forests

*Walt Browne	(208)743-6502	(208)743-9958
Dwight Kilgore	(208)743-6502	(208)743-8873

Targhee National Forest

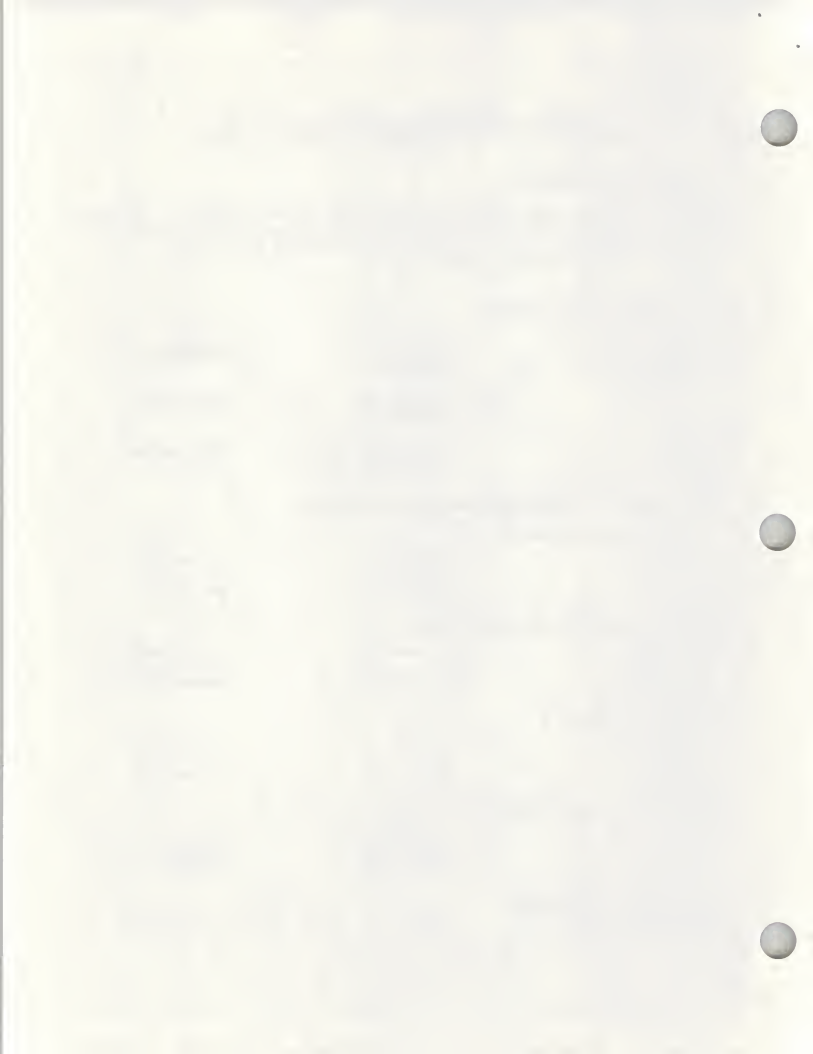
*Tom Reinecker	(208)522-7783	(208)522-9420
Don Wright	(208)522-7783	(208)529-9440

Montana Department of Fish, Wildlife & Parks

*Glenn Erickson	(406)444-5629	(406)449-2611
Dale Witt	(406)444-2612	(406)443-0044
Don Marcoux	(406)444-3186	(406)442-9433

Washington Department of Game

*Jerry Hickman	(509)456-4082	(406)466-4261
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Bureau of Land Management

	Office	Home
*Tad Day	FTS 585-1318 (406)727-0503	(406)761-7363
Wayne Elliot	FTS 585-1318 (406)727-0503	(406)727-5637

Flathead Indian Reservation

*Frank Acevedo	(406)675-4700 - 24 hour dispatch**	
Jim Claar/Bob Klaver	(406)676-4700, ext. 259	(406)675-0305 (Claar) (406)676-8955 (Klaver)

**Dispatch will take the responsibility of contacting individuals after an initial contact/request.

Forest Service

Lewis & Clark National Forest

*Roger Evans	FTS 585-1373 (406)727-0901	(406)458-6004
Mike Goggin	FTS 585-1373 (406)727-0901	(406)761-4744

Malena National Forest

*Carl R. Frounfelker	FTS 585-5082 (406)449-5082	(406)449-6282
Gordon Gray	FTS 585-5083 (406)449-5083	(406)443-3289

Malheur National Forest

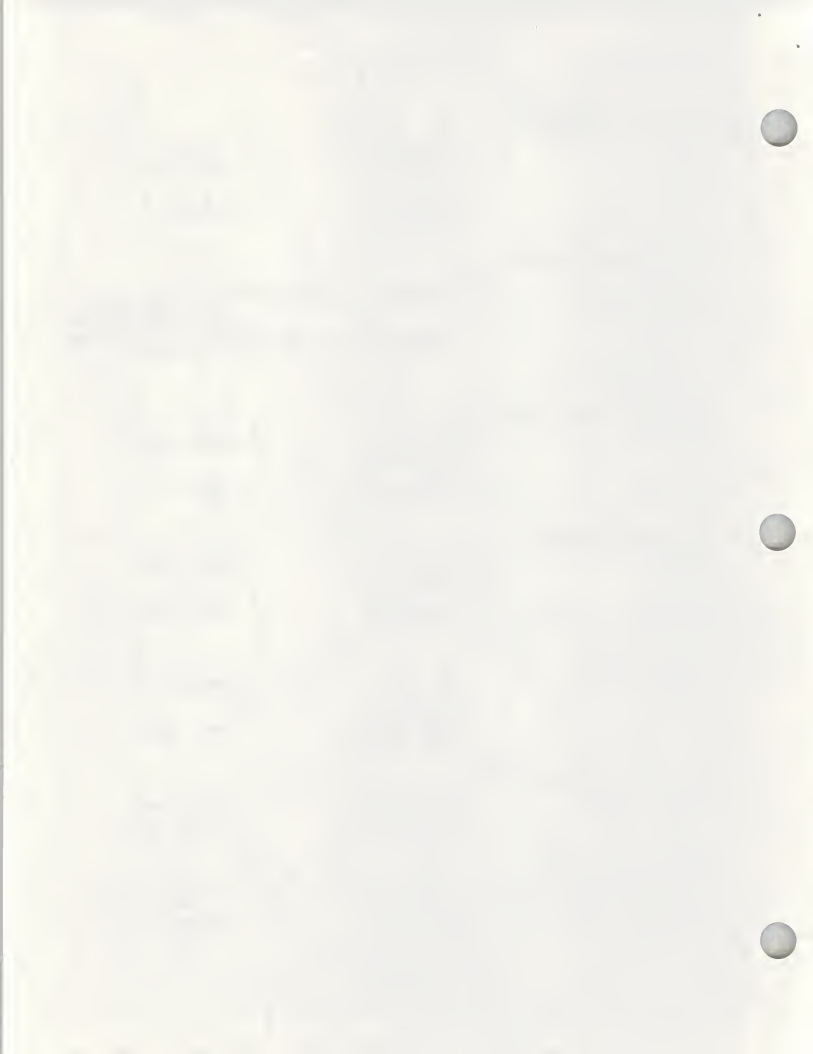
*Charles W. Spoon	FTS 585-3569 (406)329-3569	(406)251-2065
Mike Hillis	FTS 585-3575 (406)329-3575	(406)543-4125

Flathead National Forest

*Robert G. Mueller	(406)755-5401	(406)755-6813
John Laerson	(406)755-5401	(406)257-5289

Flathead National Forest

*Al Christensen	(406)293-6211	(406)293-8287
Chuck Brooks	(406)293-6211	(406)293-9858



Idaho Panhandle National Forest

	<u>Office</u>	<u>Home</u>
*Paul Harrington	(406)765-7411	(406)687-1387
William E. Norden	(406)765-7210	(406)773-2370

Gallatin National Forest

*Ross MacPherson	(406)587-5271	(406)587-7931
John T. Drake	Same	(406)586-8459
Ken Gallick	Same	(406)586-6668

Shoshone National Forest

*Steve Mealey	(307)527-6241	(307)587-6328
Jack Sanders	(307)587-2274	(307)587-6003

Custer National Forest

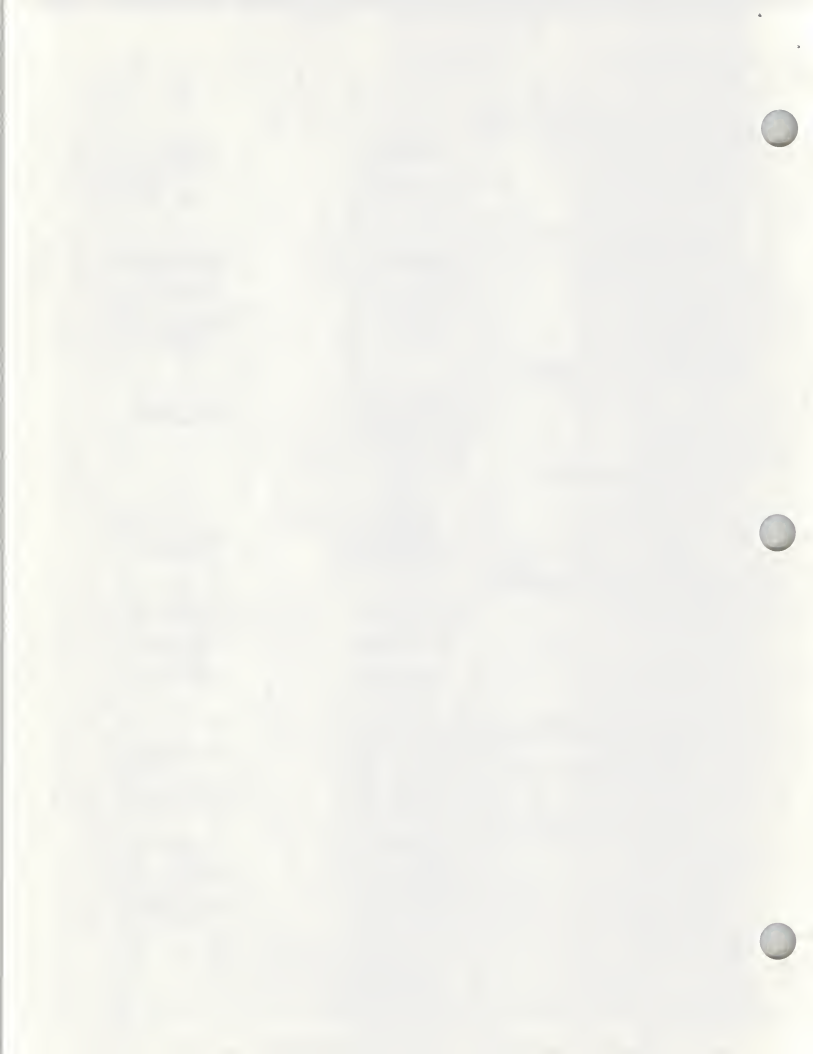
	<u>Office</u>	<u>Home</u>
*John M. Edwards	(406)657-6361	(406)652-1616
Phillip H. Jaquith	(406)446-2103	(406)446-2579

Bridger-Teton National Forest

*Mac Murdock	(307)543-2386	(307)543-2445
John Weaver	(307)733-2752	(307)739-9715
Reld Jackson	(307)733-2752	(307)733-3020

Wyoming Game & Fish Department

*Terry Killough (Shoshone National Forest)	(307)527-7125	(307)587-6351
*Tom Toman (Bridger-Teton National Forest)	(307)733-2321	(307)733-4900
Larry Roop	(307)527-7125	(307)587-5088
Dale Strickland	(307)777-7604	(307)632-1487
Rex Corral	(307)777-7604	(307)632-1689



Grand Teton National Park

*Jack Stark	FTS 584-2208 (307) 733-3587	(307) 733-3587
Bob Wood	FTS 584-2279 (307) 733-2279	(307) 733-4498

Glacier National Park

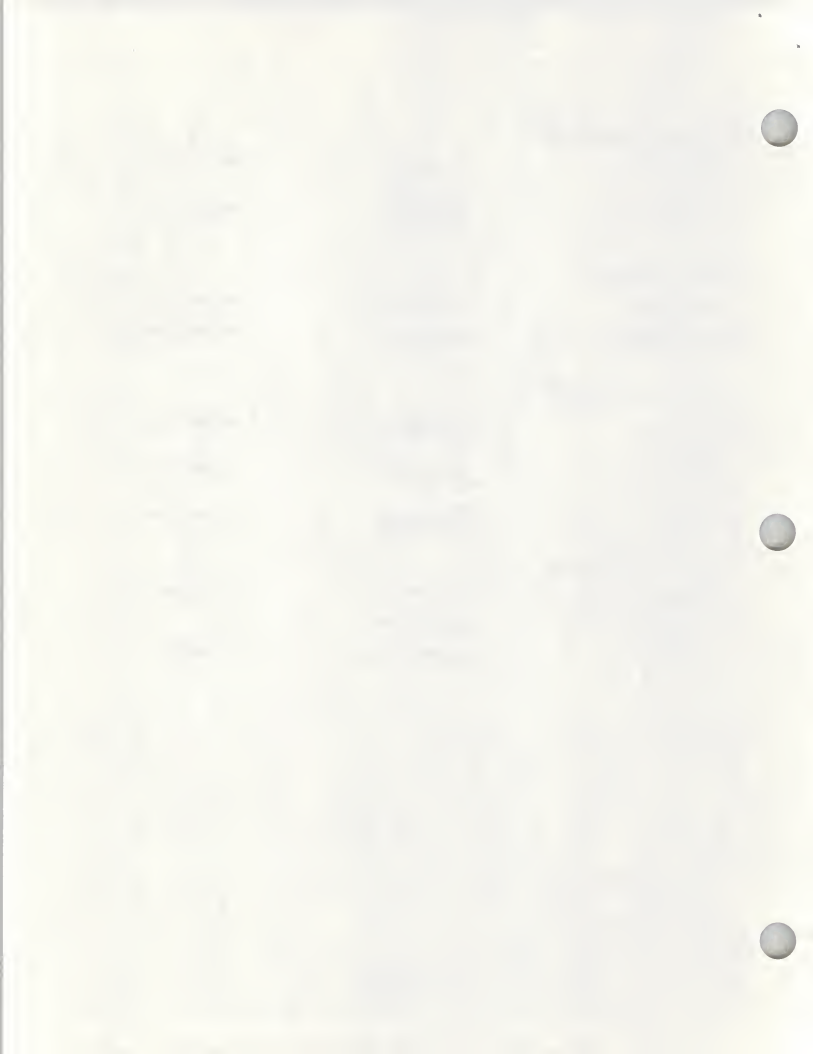
*Gary Gregory	(406) 888-5441	(406) 888-5315
Charles Sigler	(406) 888-5441	(406) 888-5458

Yellowstone National Park

*Gary Brown	FTS 585-0240 (307) 344-7381	(307) 344-7431
Tom Hobbs	FTS 585-0241 (307) 344-7381	(307) 344-7722
Sandi Fowler	FTS 585-0245 (307) 344-7381	(406) 648-7592

Targhee National Forest

*John Burns	(208) 624-3151	(208) 624-4181
Bryant Christensen	(208) 624-3151	
Dan Schindler	(208) 652-7442	(208) 624-7662



APPENDIX 4a

TABLE 1. GUIDELINES FOR GRIZZLY BEAR
CONTROL ACTION (See Footnotes)

TYPE OF <u>GRIZZLY</u>		TYPE OF <u>PROBLEM</u>							
		NO OFFENSE	CONDITION A.			CONDITION B.			
			OFFENSES	1st	2nd	3rd	1st	2nd	3rd
<u>Females</u>									
Orphaned Cub***	REL								
Cub			REL*	REL	REM**	REL	REL	REL	---
Yearling***			REL	REL	REL	REL	REL	REL	---
Adolescent***			REL	REL	REL	REL	REL	REL	---
Prime Adult			REL	REL	REL	REL	REL	REL	---
Prime Adult with Young***			REL	REL	REL	REL	REL	REL	---
					(adult)		(adult)		
Old Adult***			REL	REL	REL	REL			
Old Adult with Young			REL	REL	REL	REL	REL	REL	---
					(adult)		(adult)		
<u>Males</u>									
Orphaned Cub	REL								
Cub			REL	REL	REL	REL	REL	REL	---
Yearling			REL	REL	---	REL	REL	REL	---
Adolescent			REL	REL	---	REL	REL	REL	---
Prime Adult			REL	REL	---	REL	REL	REL	---
Old Adult			REL	---	---	REL	---	---	---

*REL - RELOCATE, **REM - REMOVE

Problem grizzlies that are senile (weak in mind or body as a result of old age) or sick or injured beyond a point where natural recovery is likely, will be removed.

***Cub - young of the year.

***Yearling - 12 to 24 months old

***Adolescent - 24 - 48 months old or breeding age or conditions

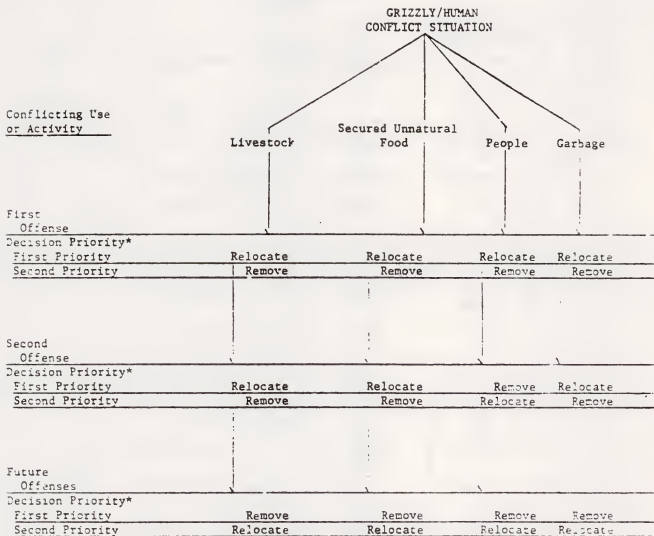
***Young - cub, yearling or adolescent accompanying mother

***Old - indicates advanced age and deteriorated physical state, indicators are tooth wear and physical appearance.

1. If a grizzly bear is not determined to be a nuisance after application of criteria in Sections II and III, no control action will be initiated.
2. Nuisance bears taken during a control action will not be held alive for more than 36 hours, more than one night, or as necessary to expeditiously execute a relocation. For example, a bear taken and discovered on the morning of the first day may be held overnight and relocated the next day if relocation is not possible the first day. The bear will not be held the second night. Bears will not be held in a snare but will be immobilized, marked, and placed in an appropriate holding facility.

3. On-site release may be accomplished if the bear taken is (a) determined not to be the nuisance bear or, (b) on a first offense when the bear cannot be relocated because of terrain, weather, or inaccessibility to transportation. Females with cubs, where relocation is identified in Table 1, will be released on-site if relocation is not feasible for previously stated reasons or if the cubs cannot also be caught and relocated with the female. On-site release will not be conducted in Management Situation Areas 3 or 5. On-site release will be accomplished after approval of the land management agency if the release is monitored in such a way to determine its success or failure with respect to bear survival and conflict resolution.

APPENDIX 4b



- *Decision considerations
1. Sex, age, condition, reproductive status, and behavior of bear.
 2. Type of conflict.
 3. Number of offenses.

FIGURE 3. CRITERIA FOR GRIZZLY BEAR CONTROL ACTION

APPENDIX 4c

IV. Relocation Sites

The general areas appropriate for grizzly relocation are listed in Table 2.

SITE	N.F.	LOCATION T. R.	STATUS	GENERAL SUITABILITY	
				OFFENDING BEAR	SEASON
1. Red Cr. Divide	Shoshone	54N 109W	Wilderness	any	any
2. Hoodoo Peak	Shoshone	53N 109W	Wilderness	non- livestock	any
3. Upper Sunlight	Shoshone	54N 107W	Non- Wilderness	any	any
4. Upper Crouch & Eagle Creeks	Shoshone	51N 109W	Wilderness	any	any
5. Thoroughfare Plateau	Bridger- Teton	47N 108W 47N 109W (E ₄)	Wilderness	any	any
6. Buffalo Plateau	Bridger- Teton	45N 109W (E ₄) 108 46N 109W (E ₄) 108	Wilderness	non- campground	any
7. Two Ocean Plateau	Bridger- Teton		Wilderness	non- campground	any
8. Mountain Creek	Bridger- Teton	49N 109W 50N 109W	Wilderness	any	any
9. Coulter Cr. & Big Game Ridge	Bridger- Teton	48N 113W 48N 114W	Wilderness	any	Prior to Sept. 1
10. Monument-Sage	Gallatin	T10S R5E	Non- Wilderness	non- aggressive non- livestock & non- garbage	Prior to Sept. 1
11. Hell Roaring Buffalo Fork	Gallatin	T9S R10E T9S R11E	Wilderness	non- aggressive non- livestock non- garbage	Prior to Sept. 1
12. Yellowstone Park	_____	_____	_____	will take only livestock pro- blem bears	any

TABLE 2 63

TABLE 2. GENERAL AREAS APPROPRIATE
FOR NUISANCE GRIZZLY BEAR RELOCATION

Choice of specific sites within the above general areas will depend upon the conditions of each case including the nature of the nuisance bear, the season of year and other uses in the area. Specific site selection will be made by unanimous agreement among all designated agency representatives participating in each grizzly control action.



APPENDIX 4d

ACTION PROCEDURES IN CASES OF GRIZZLY-HUMAN CONFLICT

National Forest Land

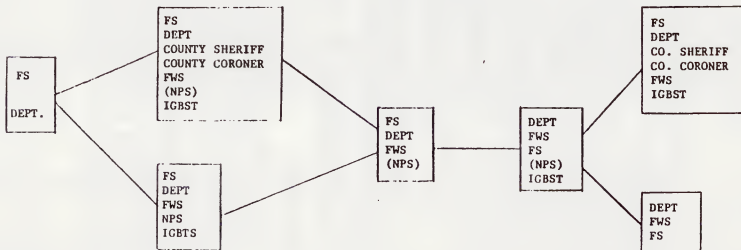
1. All incidents of grizzly-human conflict will be investigated immediately and a factual and detailed report (answering who, what, when, why, where and how) submitted to the Forest Supervisor. In case of human death, notify the County Sheriff and County Coroner. In case of grizzly death, notify the U. S. Fish and Wildlife Service, the appropriate state wildlife management agency and the Interagency Grizzly Bear Study Team.
2. State wildlife management agencies and/or the U. S. Fish and Wildlife Service will handle problem grizzlies.
3. County sheriffs will have primary responsibility for backcountry rescue.
4. The site of an incident will be closed immediately to human use until the investigation is complete and the problem solved or corrected.
5. An interagency team with members from the county law enforcement agency, state wildlife management agency, U. S. Forest Service, U. S. Fish and Wildlife Service, and Interagency Grizzly Bear Study Team will investigate all incidents of grizzly inflicted human death.
6. News releases involving grizzly-human conflict incidents will be coordinated through all concerned agencies.

National Parks

1. All grizzly-human conflicts will be investigated and a factual and detailed bear incident report (YELL SF-343, GRTE SF-343) submitted to the Superintendent's Office. In incidents where injury and/or property damage have occurred, the investigating officer's report will be supplemented when possible by the statements of witnesses to the incident.
2. All management actions involving bears will be reported by telephone to the Bear Management Office (YELL), and the Resource Management Office (GRTE).
3. All grizzly bear sightings will be recorded in the station log and telephoned daily to the Bear Management Office (YELL), and the Resource Management Specialist (GRTE). Information shall include observer, data, location, time, number, activity, and if possible, sex, age class, and individual description.



COMMUNICATION



FS - Forest Service
 Dept. - State Wildlife Dept.
 FWS - Fish and Wildlife Service
 ICBST - Interagency Grizzly Bear Study Team
 NPS - National Park Service (Teton and/or Yellowstone)
)

Appendix 5

GLOSSARY

Areas Where Grizzly Activity Is Common: Areas where grizzly presence (evidenced by grizzly sightings, sign and kills) has been consistently documented over the years.

Conserve (conservation; definition from ESA, 1973): The term "conservation" means to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping and transplantation, and in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Grizzly-Human Conflict Situation: A confrontation between man and/or his property and bear(s) in which the safety of man and/or bear(s) is jeopardized and/or property loss occurs.

Habituated: A condition of grizzlies who consistently and aggressively pursue and depend upon food materials (human food, garbage, prepared livestock and pet foods, carrion, livestock, game meat) associated with man or his activities. Such individuals usually have no fear of man and are docile in man's presence until incited.

Management Situation: A condition or state of affairs with unique circumstances involving grizzly bears. Situations apply to and are represented as mapped land areas. A given situation will apply to land areas which may differ physically but share other characteristics (i.e., grizzly populations and habitat dependencies).

Natural, Free-Ranging Grizzly Bear Population: A nonhabituated grizzly population in which individuals use natural foods exclusively under free-roaming conditions. A more natural free-ranging grizzly population could result if:

- (1) relocation would likely "wean" the problem grizzly from unnatural food use; or,
- (2) removal of the problem grizzly, if totally habituated or dangerous to man, would likely rid the population of an unnatural (addicted) individual and perhaps open a space for a more natural individual.

Nuisance: In Management Situation 1 areas, a grizzly bear to whom either or both of the following conditions apply:

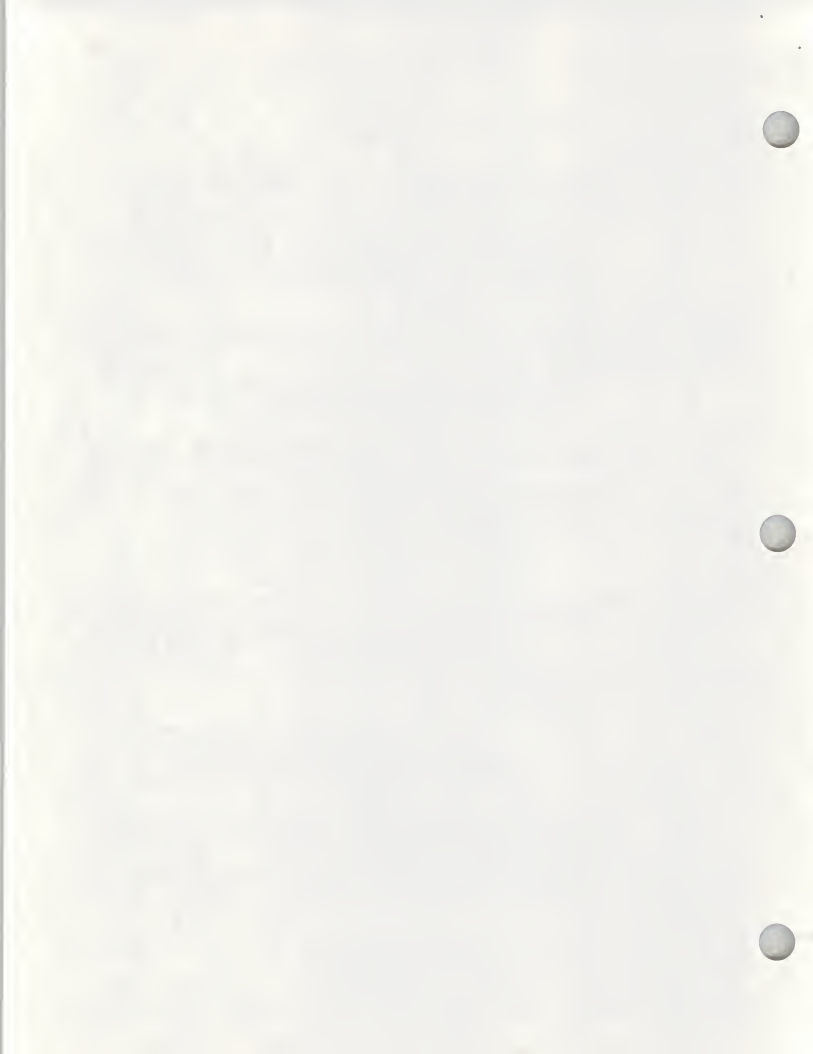
- (1) the bear uses unnatural food materials (human and livestock foods, garbage, livestock, livestock carrion and game meat) which have been reasonably secured from the bear resulting in habituation of the bear and/or human injury or loss of human life;
- (2) the bear has a history of aggressive (not defensive) behavior toward man which constitutes a demonstrable immediate or potential threat to human safety.

In Management Situation 2 areas, a grizzly bear to whom either or both of the following conditions apply:

- (1) the bear uses unnatural food materials (human and livestock foods, garbage, livestock carrion and game meat) which have been reasonably secured from the bear resulting in habituation of the bear and/or human injury or loss of human life or significant loss of property;
- (2) the bear has a history of aggressive (not defensive) behavior toward man which constitutes a demonstrable immediate or potential threat to human safety.

Species: (from ESA, 1973) The term "species" includes any subspecies of fish or wildlife or plants and any other group of fish or wildlife of the same species or smaller taxa in common spatial arrangement that interbreed when mature.

Threatened: (from ESA, 1973) The term "threatened species" means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.



Appendix 6

YELLOWSTONE OPERATING PROCEDURE Policy Statements Bear Policy

Bear Management Policy

I. Objectives

Preserve and maintain natural populations of bears as part of the park's native fauna and provide for safety of park visitors.

II. Education and Enforcement

Objective is an informed public, with appreciation of the esthetic value of bears, and an awareness that exposing bears to unnatural food sources may lead to human injury or to the bear's destruction, or both.

- A. An active information program will be directed at both visitors and employees to inform them of policies and goals of bear management, and the reasons for these.
- B. Review bear warning literature annually for pertinence to objectives. Incinerate all old literature after preserving an example of each in the research library.
- C. The dispensing of warning literature pertinent to entrances, campgrounds and to backcountry campers will be the responsibility of the District Ranger, delegated to those in direct contact with the public.
- D. Direct warning signs will be used at entrances, campgrounds, cabin and trailer areas and trailheads.
- E. Regulations concerning bear feeding and/or bear molesting and the improper disposal of trash or garbage will be strictly enforced.
- F. Campground visitors will be contacted each evening regarding bear danger and food storage, and walk through contacts will be made in any campground loop where bears have been active within the past week.

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- G. When Backcountry Use Permits are issued, each backpacker or horseback party will be given a copy of Beyond Road's End, In Grizzly Country, and/or other material relating to travel and camping in grizzly country. To the extent possible, backpackers will be encouraged to avoid areas known to contain relatively high densities of grizzly bears.

III. Reduction of Unnatural Visitor Bear Contacts

Objective is to eliminate unnatural attractants to bears before control actions are required and before contacts occur.

- A. All outdoor trash cans will be of a bear-resistant design and equipped with a removable plastic liner.
- B. All trash cans that are not of the bear-resistant design, whether located at employee residences, administrative offices, concessioner food services, stores, lodges, cabins, or other concessioner facilities, will be located inside the building served.
- C. Campgrounds and other high-concentration use areas will be bear-proofed to prevent bears from becoming habitual users of artificial foods.
- D. Roadsides, campgrounds, and all other areas of concentrated visitor use will be maintained litter-free.
- E. Garbage pickup will be carefully scheduled to prevent overflow of cans and leave as little garbage as possible overnight. Campground garbage pickup will be as late in the day as possible. Plastic can liners will be changed at every pickup. Schedule for pickup at roadside pullouts will be dictated by public use level. Overflow of cans is to be prevented. Garbage cans are to be cleaned every two to three weeks.

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- F. When loaded, trash collection vehicles will proceed directly to the appropriate transfer station, except that after late evening pickups, trash may be stored on the collection vehicle inside a closed utility building within a fenced utility area.
- G. Mishandling of garbage by park residents will be reported to the responsible employee's supervisor for remedial action. Repetition of mishandling, or any case of deliberate feeding, will result in a citation and will be grounds for dismissal or loss of in-park residence privileges.
- H. Any area may be closed to human use and/or specific types of visitor activities for the purpose of human safety and/or where the impact of man has a demonstrated adverse effect on the bear population or bear habitat. In this regard, campground opening and closing dates will be manipulated to provide for human safety. Where the potential for human/bear conflicts is extreme during the on-going visitor use season, areas will be closed by posting. Use of campgrounds located in or adjacent to areas of high grizzly bear density may be restricted at times to hardsided trailer units, pickup campers, and self-contained recreation vehicle use only. Entry into closed areas on official business shall be coordinated through the District Ranger.
- I. Leaving food unprotected overnight in campgrounds is prohibited. See Special Regulations 7.13 (g) (3).
- J. Concentrated but tactful efforts directed at breaking up bear jams will continue (primarily through the use of mobile public address systems and the handout of bear warning reminders.)

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- K. Backcountry campsites will be frequently monitored and maintained litter-free. Rotation of backcountry campsites will be judiciously utilized to prevent the degree of concentrated use that may result in a garbage or odor buildup attractive to bears.
- L. Backcountry campsites and/or trails being frequented by bears may be closed to public use until the bear is no longer an apparent hazard. Through travel may be restricted to large (four people or more) parties or to parties on horseback, at the District Rangers' discretion. Closed campsites will not be reopened until the site has been inspected, all identifiable attractions removed or neutralized and the bear(s) have apparently left the area.
- M. Camping in unauthorized sites and/or with improper equipment is prohibited. Violators will be cited.
- N. The "pack-in, pack-out" policy will be enforced in the backcountry.

IV. Control of Problem Bears

Objective is to effect prompt removal of bears from developed areas when elimination of attracting food sources has not deterred their entry.

- A. Each spring an Annual Bear Management Plan will be prepared, which will detail specific management and reporting procedures.
- B. Thorough training in trapping techniques and use of firearms will be mandatory before employees are allowed to handle bears. Use of immobilizing drugs will be restricted to those qualified through additional specialized training. Drug Qualification Standards are documented, and enforcement of same will be the responsibility of the District Ranger.

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- C. Bear Proof condition of campgrounds and other high use areas will be maintained coincidental with trapping programs to remove bears from these areas. Traps will not be baited or set in any area unless a bear is known to be present.
- D. Baited traps will be identified by conspicuous warning signs, and set traps shall not be left unattended in public use areas during busy, daylight hours. Only personnel with specific assignments on control action teams will be present at the site during capture and handling of bears. No bystander will be permitted.
- E. No bear will be captured for transplanting or destroyed in a backcountry area unless it has become unnaturally aggressive, or other alternative methods or providing for human safety cannot be employed.
- F. Necessity for trapping, trapping hours, and procedure will be the responsibility of the District Ranger. No experimental trapping or immobilizing will be permitted without his knowledge and approval.
- G. Experimental methods of fencing, repelling, trapping, or immobilizing bears will not be used until these projects are approved by the Superintendent.
- H. All bear transplants will be coordinated through the office of the Staff Specialist in charge of Bear Management.
- I. Bears will not be released outside the park except with the concurrence and cooperation of the Fish and Game Department and the U.S. Forest Service in the receiving state.
- J. Bears captured or transplanted shall be marked while immobile with a small, strap type ear tag.

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- K. No other marks or tags will be permitted without the approval of the Superintendent.
- L. No bear is to be destroyed for exhibiting its natural behavior--such as the defense of natural food sources or its young.
- M. Bears being removed from the system may, with the approval of the Superintendent, be donated to public zoos or given to any requesting state for re-establishment of populations. If there are no requests for live specimens, or it is impractical at the time to fill the request, the bear may be dispatched and the carcass processed as a scientific specimen or returned to the ecosystem.
- N. Any bear killed in the park by any means will be reported by phone or radio as soon as possible to the Communications Center. The carcass of any bear, black or grizzly, that is killed shall be disposed of according to directions from the Superintendent. Portions of the carcass that may be required for authorized in-park research may be removed from the carcass before disposal.
- O. Except in emergency situations involving human safety, the decision to destroy a bear will be made by the Superintendent. This authority will not be delegated.
- P. Bears captured on adjacent forests or the JDR Parkway may, with the approval of the Superintendent, or his delegate, be released inside the park. Bears adapted to dumps or garbage will not be considered for such release. Each proposal for accepting a bear from outside the park will be considered on its own merits and in light of the current park situation.

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V. Protection from Claims

A. In event of injury or serious property damage:

1. Follow procedural instructions for possible tort claims. Obtain photographs, interviews with victims and witnesses, statements by all concerned National Park Service Personnel.
2. Document all "pre-suppression" procedures prior to incident- i.e. statements from Campground and/or Patrol Rangers, Garbagemen, other Maintenance men, Interpreters, etc., - anyone who talked to the victim and precisely what was said. If the victim himself/herself was warned directly, it is very important to be able to document this fact.
3. Document all bear sightings, patrols, campground "walk throughs", garbage collection schedules, other damage or injuries in the immediate area.

VI. Statistics and Monitoring

A. The following information will be reported by radio or telephone to the Communications Center immediately:

1. Sightings of grizzly and black bears - description of bear(s), location, activity. This includes any occurrence of a bear in a developed area.
2. Any bear incident or management action which will later be reported on a Case Incident Record.
3. Confrontations with bears, in which evasive action was required to avoid contact.
4. Any known death of a bear, regardless of cause.
5. Any closure or restriction of trails or areas because of bear activity.

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- B. In addition to the above, additional bear information as directed in current memoranda will be reported to the Communications Center on a daily basis. The Communications Center will assemble a parkwide bear log from this information. The Resources Management Office will maintain the permanent park bear log records.
- C. The special Case Incident Record form (10-343), overtyped for bear reports, will be used to report all cases of property damage by bears, including vehicles that are damaged from striking bears. It is also used to report all cases of human injury inflicted by bears and all Management Actions concerning bears.
- D. All handling of grizzly bears marked for research purposes is to be coordinated with the Interagency Grizzly Bear Study Team.

VII. Continue bear research

Research and monitoring are integral parts of bear management. The objective of this program is to provide management with comprehensive factual knowledge of bear distribution, population dynamics, behavior, ecology of human-bear interrelations, and to evaluate the effectiveness of management programs affecting or affected by the grizzly bear population.

A vigorous integrated research program will be continued, including:

- a. The development of census techniques that will provide realistic population estimates of wild, free-ranging black bear and grizzly bear within and adjacent to the national park.
- b. Determining population dynamics, seasonal and annual distribution patterns, and movement of grizzly bears within national park and adjacent national forest lands.

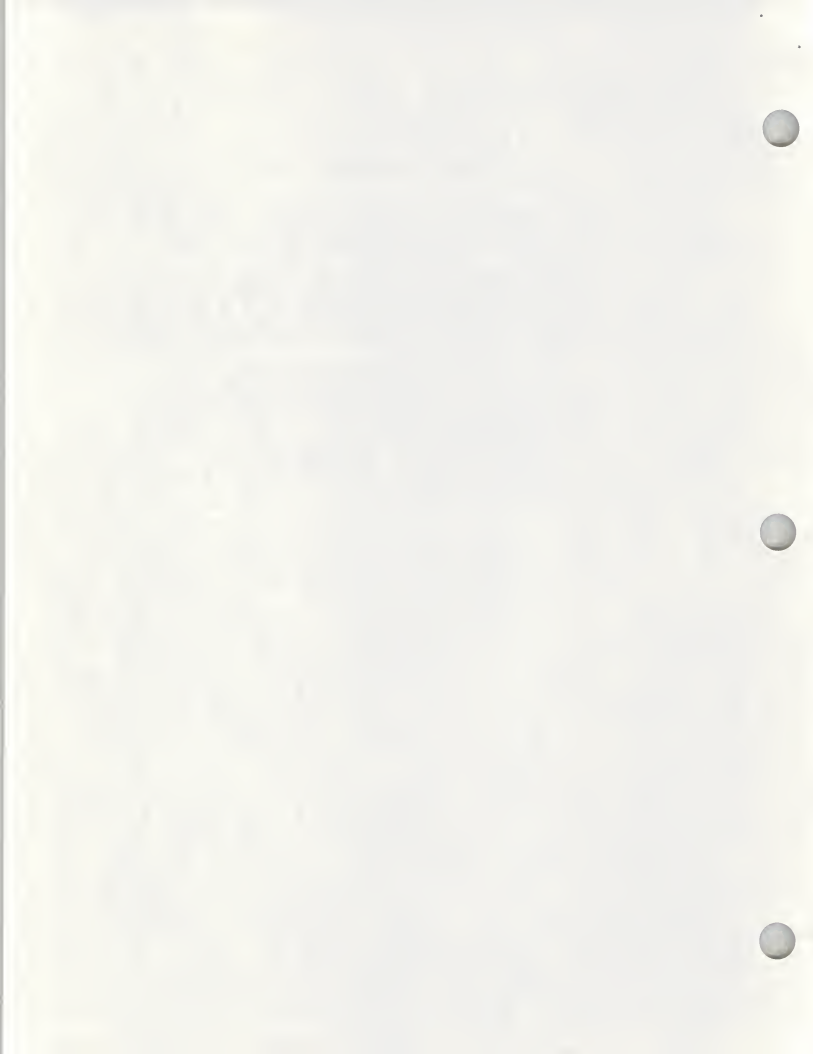
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5/78

YELLOWSTONE OPERATING PROCEDURE
Policy Statements
Bear Policy

Bear Management Policy

- c. Determining habitat requirements and the ecological relationships of the grizzly bear to other fauna and to plants of the national park and adjacent national forest ecosystems.
- d. Determining immediate and probable long-term stresses and impacts on bears caused by various land use practices within and adjacent to the park. This will include an evaluation of the various types and intensities of visitor use activities, resource use, land development, and other management actions.
- e. In carrying out the above general research objectives, the efforts of National Park Service scientists and the Inter-agency Grizzly Bear Study Team will be supplemented by encouraging outside scientists from the diverse disciplines of physical, biological, and behavioral sciences to undertake studies within the national park and to contribute to the understanding of park ecosystems. Such additional research efforts will, of course, be coordinated and regulated under a permit system.

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Title 36 Parks, Forests and Public Property
CHAPTER I NATIONAL PARK SERVICE, DEPARTMENT OF THE INTERIOR
PART 7 SPECIAL REGULATIONS, AREAS OF THE NATIONAL PARK SYSTEM

Grand Teton National Park

Bear Management

AGENCY: National Park Service

ACTION: Proposed Rule

SUMMARY: The proposed regulation set forth below is necessary to control food storage on Federally owned lands within Grand Teton National Park. Controls are necessary to reduce the amount of property damage experienced by visitors, to ensure visitor safety and to eliminate the artificial food sources available to the native black bear population. The extensive availability of human supplied food has altered the behavior, distribution and foraging habits of the bears and resulted in increased conflicts between man and bear.

DATES: Written comments, suggestions or objections will be accepted until _____. (30 days after publication in the "Federal Register".)

ADDRESSES: Comments should be directed to:

Superintendent

Grand Teton National Park

Moose, Wyoming 83012

FOR FURTHER INFORMATION CONTACT:

Robert I. Kerr
Superintendent
Grand Teton National Park
P. O. Drawer 170
Moose, Wyoming 83012

SUPPLEMENTARY INFORMATION:

BACKGROUND

The purpose of this regulation is to restrict the manner in which food or similar organic materials may be stored. These restrictions will reduce the availability of artificial food sources to free roaming black bears. Experience has shown that black bear behavior, distribution and foraging habits are modified by large concentrations of easily available human food sources. Repeated successful access to human food establishes a food-reward association between man and bear. This association has resulted in personal injuries and thousands of dollars in property damage. Present and past artificial food associations have resulted in segments of the black bear population losing their fear of man and entering campsites and cars in search of food.

AUTHORITY

Section 3 of the Act of August 25, 1916 (39 Stat. 535, as amended; 16 U.S.C. 3); Section 2 of the Act of June 8, 1906 (34 Stat. 225, 16 U.S.C. 431); a Proclamation (No. 658) of

September 24, 1906 (34 Stat. 3236); 245 DM-1 (34 FR 13879), as amended; NPS order No. 77 (38 FR 7478); and Regional Director, Rocky Mountain Region, Order No. 1 (39 FR 12369).

IMPACT ANALYSIS

The National Park Service has determined that this document does not contain a major proposal requiring preparation of an Economic Impact Statement under Executive Order 11821 and OMB Circular A-107; nor is it a major Federal Action significantly affecting the quality of the human environment, which would require preparation of an Environmental Impact Statement.

In consideration of the foregoing, it is proposed to amend Part 7.22 of Title 36, Code of Federal Regulations by the addition of a new paragraph (J) as follows:

§ 7.22 Grand Teton National Park

* * * * *

(J) Bear Management. At all campsites, picnic grounds and parking areas, food or similar organic material must be either: (1) sealed in a vehicle or camping unit that is constructed of solid, non-pliable material; or (2) suspended at least ten (10) feet above the ground and four (4) feet horizontally from any support, tree trunk or branch and at least 150 feet from any

campsite. This restriction does not apply to food that is in the process of being transported, being eaten or is being prepared for eating.

A handwritten signature in dark ink, appearing to read "Robert I. Kerr", with a long horizontal flourish extending to the right.

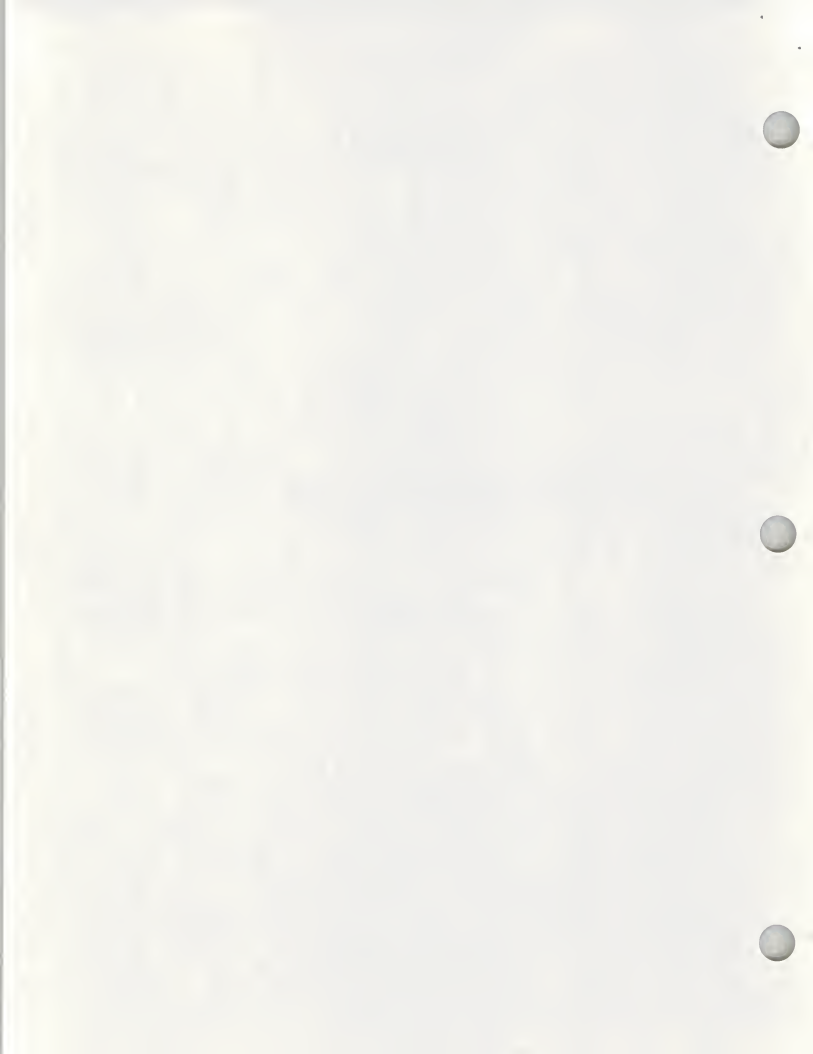
Robert I. Kerr
Superintendent
Grand Teton National Park

Appendix 7

METHOD FOR DETERMINING GRIZZLY BEAR HABITAT QUALITY
AND ESTIMATING CONSEQUENCES OF IMPACTS
ON GRIZZLY HABITAT QUALITY

By

STEPHEN P. MFALEY



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PREFACE

The Endangered Species Act of 1973 (P.L. 93-205) requires that all federal agencies take necessary actions to insure that critical habitat for endangered or threatened species is not (adversely) modified or destroyed (Sec. 7).

Federal agencies are obliged to analyze and review their activities and programs to determine how listed species will be affected (Fish and Wildlife Service, 1976). The method presented here is a response to this obligation.

The objective of the method is to provide an analytic process capable of (1) producing reliable determinations of the quality of proposed land use sites as grizzly habitat, and (2) providing reliable estimates of the effects (consequences) of proposed activities on determined grizzly habitat.

Effects of programs and activities (logging, fire management, road construction, mineral exploration, livestock grazing, recreation and grizzly habitat improvement) on grizzly bear habitat are assumed to be positive, negative, or neutral depending on many variables. This assessment method will facilitate the reliable estimation of consequences of each proposed land use on a site-by-site basis.

INTRODUCTION

This Forest Service process will be used to evaluate proposed land uses which can affect grizzly bears (*Ursus arctos horribilis*) and/or their habitat. The process can produce reliable determinations of the grizzly habitat quality of proposed use areas in grizzly range (Figure 1) and reliable estimates of consequences of impacts of proposed land uses on grizzly habitat quality.

This method is based primarily on grizzly habitat quality ratings (HQR) and consequence analysis ratings (CAR) which can provide the needed habitat quality determinations and consequence analysis estimates. HQR are based upon seasonal, on-site determinations of grizzly food, cover, space and behavior quality. CAR are based upon seasonal on-site estimates of consequences of proposed land use impacts upon the quality of habitat (food, cover, space and behavior present) in proposed land use areas.

The habitat evaluation method format, in abbreviated form, is as follows where ratings are symbolized as:

HQR

H = High
M = Medium
L = Low
O = None

CAR

Neg - Negative
Neu - Neutral
Pos - Positive

	Food		Cover		Space		Behavior		Seasonal Summary
	FHQR	CAR	CHQR	CAR	SHQR	CAR	BQR	CAR	HQR/BQR CAR
Spring									
Summer									
Autumn									
Annual									
Summary									

The method also includes a search procedure for grizzly sign and activity. Data from these searches are intended to supplement habitat evaluation data.

SURVEY PROCEDURES ^{1/}

Overview

Extensive and intensive survey areas are designated for proposed land use sites. Primary and secondary land use impact areas are designated within the survey areas. HQR and CAR are based upon data taken in sample plots located in each known grizzly habitat component (Tables 1 and 2) and each other forested habitat type (Pfister et al., 1974) and grassland/shrubland habitat type (Mueggler and Handl, 1974) present in each impact area. Searches for grizzly sign and activity are conducted in impact areas to supplement HQR data.

Survey Areas, Impact Areas, Plot Selection and Sampling

Extensive survey areas are the largest designated in association with proposed land use sites. They include the use sites but extend far beyond them and may encompass one or more townships. They are delineated on 1:62,500 USGS maps. Extensive surveys provide general overviews of the status of grizzly bears and other resources. Off-site analyses of aerial photos, topographic and vegetation maps, land use records, unit plans and other pertinent sources provide general information about topography, vegetation types, climate, wildlife and resource use history.

Intensive survey areas occur within extensive areas, include the proposed land use sites, and may extend beyond them to encompass one or more sections but usually not townships. They are delineated on 1:23,674 USGS maps, aerial photos or orthophotoquads. Intensive surveys provide specific information about proposed land uses and grizzly habitat. The proposed locations of land uses and areas likely to be affected are mapped. Locations of the main grizzly habitat components, activity centers, and use sites near proposed use areas are also accurately mapped. Areas of overlap are highlighted. Appropriate off-site sources for this information are plans of proposed land uses, aerial photos, habitat type maps, unit plans, grizzly activity reports and grizzly habitat studies.

Primary and secondary land-use impact areas are delineated within intensive survey areas on 1:23,674 USGS maps. Primary areas are those in which one or all of grizzly food, cover, space and behavior would be altered directly or indirectly by new uses of the area. Secondary areas are those in which alterations would be possible but much less likely than in primary areas. Sizes of impact areas will vary with terrain and type and duration of each proposed activity.

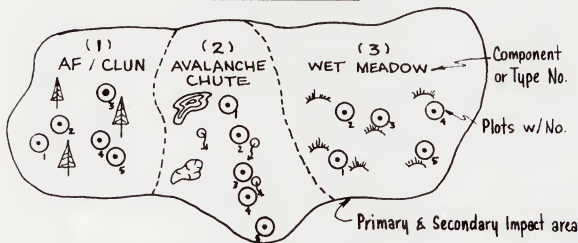
^{1/} A checklist of survey procedures and a data collection procedure summary are included in the Appendix.

Judgment is necessary in delineating impact areas. Larger areas are appropriate for large-scale uses such as water impoundments and roads, while smaller areas apply to small-scale uses such as dispersed, backcountry recreation sites. Prominent geophysical features (wet sites, talus slopes, etc.), grizzly habitat components and other habitat types determined from on-site and off-site analyses are accurately displayed on maps of primary and secondary impact areas.

Grizzly food and cover are sampled, using the same 1/10 acre circular plots, 2/ in spring, summer and autumn in primary and secondary impact area. Plot sampling procedures follow those of Pfister et al. (1974). Five plots are located and sampled in representative parts of each grizzly habitat component and each other habitat type present in each impact area. If a habitat component or other habitat type is continuous throughout both impact areas it is sampled with only one five plot group distributed through both impact areas. Habitat types not presently identified as grizzly habitat components are sampled to increase the base of data on vegetation types important to grizzlies.

Plot centers in most sample areas are chosen objectively by, for example, pacing pre-determined distances along pre-determined compass courses into habitat components or types. Some habitat components, such as the AF/Luhi/Mefe forested habitat type contain small microsites (pond edges, seeps and springs) which are of greater importance to grizzlies than other parts. These microsites and the habitat components or types proper are each sampled with five plots. Microsites are appropriately described and identified.

SAMPLING AREA DESIGN



Many non-forested areas listed as grizzly habitat components in Tables 1 and 2 can also fit forested habitat type classifications. Non-forested components (such as avalanche chutes and small, wet meadows) occurring as continuous parts of forested habitat types are sampled separately.

Data for food and cover taken from each five plot sample are kept on master Form 1. Individual master forms are maintained for every habitat component and each other habitat type occurring in each impact area. Evaluations of grizzly behavior and spatial use are also made three times a year and are based on considerations of each impact area taken as a whole rather than on sample plots. These evaluations are recorded on Form 2.

Spring samples are normally taken between mid-May and mid-June, depending on local phenology. Sampling occurs before early forbs (Claytonia spp., Ranunculus spp., Anemone spp., Erythronium spp., Fritillaria spp., Dodecatheon spp., etc.) are gone or inconspicuous. Summer plots are sampled when seeds of grasses and forbs are normally ripe and their leaf tips drying and fruits of deciduous shrubs are green. These conditions normally exist (except in very wet sites) in early August. Autumn sampling occurs normally in early October when grasses and forbs in all but wet sites have dry or drying leaves and stems and fruits of shrubs are dry. Seasonal sampling facilitates the determination of availability and use of food, cover and space.

A search for grizzly sign and activity is conducted in primary and secondary impact areas. Grizzly sightings, tracks, scats, diggings, hair and other sign are reported on Forms 4 and 5.

Search for Grizzly Sign and Activity

Searches for grizzly sign and activity are conducted in spring, summer and autumn as part of the overall evaluation process. Searches are conducted from the ground in primary and secondary impact areas. Ground searches may be supplemented by aerial surveys if feasible.

Ground searches should be systematic. A recommended method involves the establishment of permanent walking routes. Routes are laid out in a grid configuration with a constant interval between routes. Intervals should be spaced to give representative coverage of impact areas. Care should be taken to include the more important habitat components (avalanche chutes, burns, wet meadows, etc.) in survey routes. Routes are walked at least once, but as many times as feasible, each season.

Grizzly sightings, tracks, diggings, hair, dens and other sign noted along routes are reported on Forms 4 and 5. Grizzly scats are also collected, analyzed, and the contents reported. Basic references are: Murie (1954), for species, track and scat identification; Tisch (1961) and Mealey (1977), for scat identification and analysis; Greer and Craig (1971), for track identification; Spence (1963), for hair identification and Craighead and Craighead (1972) and Knight et al. (1977) for dens.

Biological Requirements and Characteristics:
Food, Cover, Space and Behavior

Food

Habitat Quality Determination

Food habitat quality is determined by identifying the value of each habitat component or type as a producer of grizzly bear foods. Quality is expressed by a seasonal food habitat quality rating (FHQR).

FHQR is a value which includes considerations of total occurrences, total coverage and food value of grizzly food plants on sample plots and presence and food value of animal material anywhere in areas represented by sample plots.

Total occurrence equals the total number of bear food plant species in the five plot sample in each habitat component or type. It is determined by adding the total entries for an evaluation period in the TOT. and AVG. column on Form 1. Species totals are translated into letter values using the conversion system in Note 1, Form 1.

Coverage for each species equals the canopy coverage by each species of each plot. Average coverage is the sum of individual species coverage values over the five plot sample, divided by five. Total coverage is the sum of the average coverage values of all bear food species in each habitat component or type. Total coverage percents are converted into letter values using the conversion system in Note 2, Form 1.

Food value is a function of seasonal food quality, production and use. Letter values for food quality of food groups during different seasons are as represented in Note 3, Form 1. Plant food values are applied to the food group present with the highest canopy coverage sub-total and the highest food value in the season of measurement.

Animal material includes elk, deer (Odocoileus spp.), moose (Alces alces), fish and rodents occurring alive or as carrion anywhere in areas represented by each group of five plots. Direct evidence can be droppings, tracks, visual sightings, casts, burrows, antler rubs, wallows and travel routes. Indirect evidence can be records of use (such as for wintering and calving grounds, and for fish spawning habitat). Before animal material food value is recorded as either H or M (Note 3, Food Group 5, Form 1) direct or indirect evidence must be available establishing the probability or likelihood of grizzly food use of the material.

When animal material is present, FHQR equals the sum of the letter values for animal material food value and total occurrence, total coverage and food value of food plants where H = 3, M = 2, L = 1 and O = 0. Sums become letter values according to the following conversions: 0-4 = L, 5-8 = M and 9-12 = H. For example, assume animal material is H, total occurrence is L, total coverage is H and food value is O; the sum is 7 so FHQR = M. When animal material is absent, FHQR equals the sum of the letter values for total occurrence, total coverage and food value of food plants where H = 3, M = 2, L = 1 and O = 0. Sums become letter values by the following conversions: 0-3 = L, 4-6 = M and 7-9 = H.

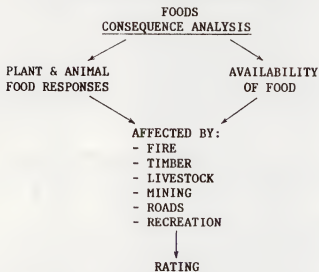
When FHQR = H, food habitat quality is high; when FHQR = M, food habitat quality is medium; when FHQR = L, food habitat quality is low; and no food habitat quality exists when FHQR = O.

Consequence Analysis Estimation

Consequence analysis rating (CAR) involves estimation of the probable or necessary effects of proposed land use impacts on the quality of grizzly food on all five plots taken as a group or whole and the area represented by them. Consequences are estimated by (1) identifying all probable impacts of proposed land uses on each component's or type's FHQR including plant and animal foods and the soils which support them, and (2) estimating the probable effects of the impacts upon food and soils.

CAR are based upon estimates of (1) desirable species (see ecology section) and other grizzly food plant's and animal's probable responses to different proposed land uses, (2) the likelihood of soil disturbances, and (3) probable food availability to bears.

CONSEQUENCE ANALYSIS SYSTEM - FOOD



NEGATIVE - PLANT & ANIMAL FOOD SYSTEM DEGRADED

NEUTRAL - PLANT & ANIMAL FOOD SYSTEM MAINTAINED

POSITIVE - PLANT & ANIMAL FOOD SYSTEM ENHANCED

Rating categories are as follows:

Neg. = Negative effect on food habitat quality (FHQR). The likelihood is great that (1) most of the bear food plant species in the habitat component or type (treating all plots as a whole) would decrease, or (2) food species (plants and animals) would otherwise become unavailable to bears at critical times. Any or all of the following conditions could apply:

- (a) Soil - Soils would be broken, scarified, exposed or overturned.
- (b) Water - Water-table and/or drainage patterns would be altered resulting in too much or too little water.
- (c) sunlight - When combined with soil disturbance, sun exposure, through total overstory removal, would favor "heliophytic" (sun-loving) intermediates and least desirables over the more "sciophytic" (shade-loving) desirables.

(d) Plants and Animals - Food plant root systems would be exposed, removed or overturned. Animals and plants would become unavailable as food to bears through either direct use and/or removal by other consumers (livestock, wildlife and man) or other activities which would interfere with grizzly access to or use of food plants and animals.

Neu. = Neutral effect on food habitat quality (FHQR). Most bear food plants would likely be unaffected by the proposed activity. None of the above conditions (a-d under Neg.) would apply.

Pos. = Positive effect on food habitat quality (FHQR). Conditions favoring food plant and animals would be initiated or enhanced. Any or all of the following conditions could apply:

(a) Soil - Soil stability and healing would be enhanced without soil disturbance.

(b) Water - Water supply would be altered to benefit desirables.

(c) Sunlight - Sun exposure would be altered (slightly increased through partial overstory removal) without soil disturbance, benefiting desirables.

(d) Plant and Animals - Conditions for increasing, re-establishing and/or invigorating grizzly foods would be initiated or improved. Availability of food to bears would be increased by removing interference factors and/or other consumers.

POSITIVE, NEUTRAL AND NEGATIVE EFFECTS COULD ALL CONCEIVABLY RESULT FROM IMPACTS ON THE SAME PROPOSED LAND USE SITE. PROFESSIONAL JUDGMENT AND DISCRETION ARE NECESSARY IN ORDER TO RELIABLY ESTIMATE THE DOMINANT CONSEQUENCES AND CHOOSE A CAR WHICH REFLECTS THEM. GENERALLY A CONSERVATIVE APPROACH IS DESIRABLE. FOR EXAMPLE, ONE SEVERE NEGATIVE EFFECT MAY OFFSET TWO OR MORE POSITIVE EFFECTS. THE EFFECT OR GROUP OF EFFECTS WHICH WILL EXERT THE MAJOR INFLUENCE ON GRIZZLY USE OF THE SITE WILL RECEIVE THE GREATEST CONSIDERATION IN CAR.

The appropriate food habitat quality CAR value is placed in the blank opposite FHQR on Form 1. VERBAL RATIONALE FOR THE RATING, INCLUDING MAGNITUDE AND DURATION OF LIKELY EFFECTS IS GIVEN ON FORM 3.

Cover

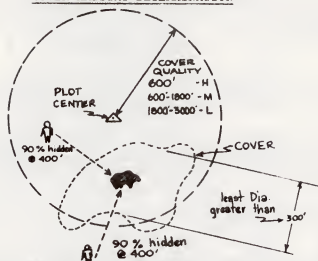
Habitat Quality Determination

Cover habitat quality is determined by identifying each habitat component's or type's value in providing for the denning and security or hiding needs of grizzlies. Quality is expressed by a seasonal cover habitat quality rating (CHQR).

The same sample plots used to assess FHQR are used to determine CHQR. Cover is evaluated as it relates to food because cover is believed to have its greatest value to grizzlies when it facilitates efficient food use. Thomas et al. (1976) used a similar approach in assessing elk food/cover relationships.

Cover is defined as vegetation and/or topography which hides 90 percent of a grizzly from the view of a person 400 feet away. Cover should have a least diameter of 300 feet or greater. (Definition adapted from Thomas et al., 1976).

COVER HABITAT DETERMINATION



Cover in relation to each plot of each sample group is evaluated using the following criteria:

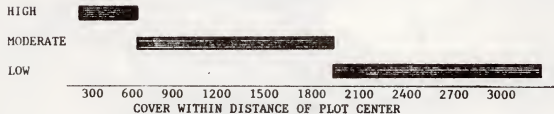
CHQR = H; cover habitat quality is high when cover occurs within 600 feet of plot center.

CHQR = M; cover habitat quality is medium when cover occurs between 600 and 1,800 feet of plot center.

CHQR = L; cover habitat quality is low when cover occurs between 1,800 and 3,000 feet from plot center.

CHQR = 0; no cover habitat quality exists when cover is absent within 3,000 feet of plot center.

COVER HABITAT QUALITY



CHQR equals the sum of individual plot (chqr) ratings P-1 + P-2 + P-3 + P-4 + P-5, where H = 3, M = 2, L = 1 and 0 = 0. Sums become letter values according to the following conversions: 0-5 = L, 5-10 = M and 10-15 = H. For example, assume the following chqr values: 0, H, H, M, and L for P-1 through P-5 respectively. The sum is 9 so CHQR = M.

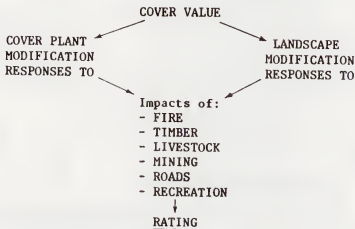
When CHQR = H, cover habitat quality is high; when CHQR = M, cover habitat quality is medium; when CHQR = L, cover habitat quality is low; and no cover habitat quality exists when CHQR = 0.

If a denning area is known or suspected to occur in areas represented by each sample group, yes should be written in the blank under CHQR on Form 1. Other observations should be given as appropriate in the space provided for other comments.

Consequence Analysis Estimation

CAR requires the estimation of the probable or necessary effects of proposed land use impacts on CHQR or cover value of vegetation and topography on all plots taken as a whole and the area represented by them. This involves (1) identification of all probable land use impacts, (2) estimation of probable cover plant responses to probable impacts, and (3) estimation of the extent of probable changes in landscape.

CONSEQUENCE ANALYSIS SYSTEM



NEGATIVE - PLANT & LANDSCAPE COVER WOULD DECREASE

NEUTRAL - PLANT & LANDSCAPE COVER WOULD BE MAINTAINED

POSITIVE - PLANT & LANDSCAPE COVER WOULD BE ENHANCED

Rating categories are much the same as for food CAR because most cover vegetation, including herbs and shrubs, will respond negatively to severe mechanical soil disturbances. Conifer regeneration is favored by scarification, but overall site food quality is lowered. Categories are as follows:

Neg. = Negative effect on cover habitat quality (CHQR). Most trees, shrubs and tall herbs providing cover would decrease. Landscape would be altered to reduce cover quality. The following effects would apply.

(a) Topography - Relief would be altered or otherwise interfered with to reduce its qualities for escape and security.

(b) Soil - Soil would be exposed.

(c) Water - Water sources would be detrimentally altered.

(d) Plants - Cover plants, including root systems, would be removed, overturned or otherwise disturbed and/or cover plants would become unavailable to bears through activities which would interfere with grizzly access to them.

Neu. = Neutral effect on cover habitat quality (CHQR). Cover would be unaffected by the proposed activity. None of the above conditions (a-d under Neg.) would apply.

Pos. = Positive effect on cover habitat quality (CHQR). Conditions favoring cover plants and relief would be initiated or improved. One or all of relief, soil, water, sunlight and plant influences on cover would be improved.

The appropriate cover habitat quality CAR value is placed in the blank opposite CHQR on Form 1. If dens or den sites are present or suspected, likely effects of impacts are indicated in the space provided below CHQR opposite denning area on Form 1. Consequence stratification rationale should be included on Form 3 as appropriate.

Space

Habitat Quality Determination

Spatial Habitat quality is determined by identifying each impact area's value as part of the total space used by an individual or population of grizzlies. Quality is expressed by seasonal space habitat quality rating (SHQR).

SHQR is a value which expresses the quality of an impact area as part of a total grizzly use system. Quality is evaluated using the following criteria:

SHQR = H; space habitat quality is high when the impact area is part of a grizzly use system which contains a resident grizzly or a resident population of grizzlies and the following conditions apply: The area containing the system should be large enough to encompass all the habitat components deemed necessary for grizzlies. These habitat components often occur in remote, protected or nonprotected situations in the same general area. They are often isolated or separated by substantial distances, but serve as interacting parts of a grizzly use system. Small isolated, seasonably-important areas not within the same general area as above, but within the same region and available to individual bears are also included. The system includes specific geographic units such as mountain ranges, drainages or certain definable parts thereof.

SPACE HABITAT QUALITY DETERMINATION

LOW QUALITY

AREA SELDOM USED BY SPECIES;
SPECIES WOULD BE VULNERABLE
IN AREA; HABITATS ARE NOT OF
CRITICAL IMPORTANCE.

MODERATE QUALITY

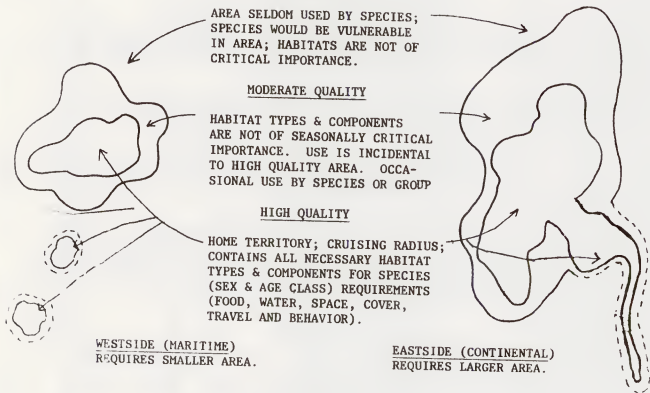
HABITAT TYPES & COMPONENTS
ARE NOT OF SEASONALLY CRITICAL
IMPORTANCE. USE IS INCIDENTAL
TO HIGH QUALITY AREA. OCCA-
SIONAL USE BY SPECIES OR GROUP

HIGH QUALITY

HOME TERRITORY; CRUISING RADIUS;
CONTAINS ALL NECESSARY HABITAT
TYPES & COMPONENTS FOR SPECIES
(SEX & AGE CLASS) REQUIREMENTS
(FOOD, WATER, SPACE, COVER,
TRAVEL AND BEHAVIOR).

WESTSIDE (MARITIME)
REQUIRES SMALLER AREA.

EASTSIDE (CONTINENTAL)
REQUIRES LARGER AREA.



SHQR = M; space habitat quality is medium when the impact area is at the "outer edges" of a high quality area. The area may serve as a buffer between high and lower quality areas (Erickson, 1976, 1975) and may contain one or more important habitat types or components, but none that are of critical seasonal importance such as early green-up areas. The area may be used occasionally by an individual grizzly or a population of grizzlies from a high quality area.

SHQR = L; space habitat quality is low when the impact area is at the extreme outer fringe of a medium quality area. The area may be considered marginal in the sense that individual grizzlies may be highly vulnerable to established and legitimate uses. The area may contain one or more habitat components but none of critical seasonal importance. The area is seldom used by grizzlies.

SHQR = 0; no space habitat quality exists when impact areas are not associated with an established grizzly use system and no grizzly habitat components occur.

SHQR = HX; characteristics of H are present but grizzlies do not occur in the area (potential range).

SHQR = MX; characteristics of M are present but grizzlies do not occur in the area (potential range).

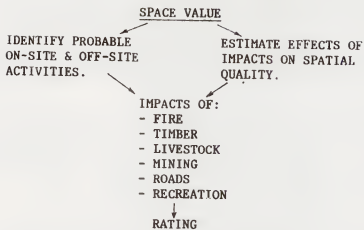
SHQR = LX; characteristics of L are present but grizzlies do not occur in the area (potential range).

After the appropriate SHQR is chosen, the value is entered in the blank under SHQR on Form 2.

Consequence Analysis Estimation

CAR requires the estimation of the probable or necessary effects of proposed land use impacts on SHQR or the impact areas and the use systems of which they are a part. This requires (1) identification of all probable activities and their probable impacts, and (2) estimation of effects of impacts upon spatial quality and the components which make it up.

CONSEQUENCE ANALYSIS SYSTEM - SPACE



NEGATIVE - ACTIVITIES THAT WOULD CAUSE THE SPECIES TO AVOID AN AREA OR COME IN CONFLICT WITH MAN.

NEUTRAL - ACTIVITIES THAT WOULD NOT CAUSE A SPECIES TO AVOID AN AREA.

POSITIVE - ACTIVITIES OR MANAGEMENT THAT WOULD ENHANCE HABITAT QUALITY AND REMOVE OR RESTRICT ACTIVITIES CAUSING SPECIES TO AVOID AREA.

Rating categories are as follows:

Neg. = Negative effect on space habitat quality (SHQR). Any negative effect recorded for food (FHQR) and/or cover (CHQR) probably constitutes a negative effect here. In addition, any other activities which would likely end or seriously interfere with or disrupt use of an area by grizzlies probably constitutes a negative effect. Such activities could include, but not be limited to, housing subdivisions, transportation and recreation uses including trails, roads, cross-country snow courses and ORV activity. Human activities which may or may not cause physical site alterations but could cause grizzlies to avoid use areas because of excess noise and visual disturbances, or increase opportunities for grizzly-human conflict, would cause negative effects.

Neu. = Neutral effect on space habitat quality (SHQR). Space would be unaffected by the proposed activity.

Pos. = Positive effect on space habitat quality (SHQR). Any positive effects recorded for FHQR and/or CHQR probably constitute positive effects. Any other general benefits or enhancements of conditions for grizzlies resulting from the use (such as removal of pre-existing negative factors through, for example, road closures and removal of garbage facilities or other human developments) would apply here.

The appropriate space habitat quality CAR value is placed in the blank SHQR on Form 2. A verbal stratification of consequences is entered on Form 3.

Behavior

Behavior Quality Determination

Behavior quality determination involves identification or estimation of the general predisposition of grizzlies in each impact area to man and to natural foods. Behavior quality is expressed by a seasonal behavior habitat quality rating (BHQR).

BHQR is a value which expresses (1) the extent to which grizzly behavior in impact areas is pristine or modified with respect to food use and man, and (2) likely human-grizzly conflict potential in impact areas assuming accepted measures of food storage and garbage disposal are used. BHQR are made using the following criteria:

BHQR = H; behavior quality is high when behavior in impact areas is essentially pristine. No grizzlies are habituated to man and all flee in most encounter situations. Conflict potential is low. Natural foods are used exclusively by all individuals under free-ranging conditions.

HIGH BEHAVIOR QUALITY

BEAR IS NOT HABITUATED TO MAN: NATURAL FOODS ARE USED: MOST BEARS FLEE MAN ON ENCOUNTERS; CONFLICT POTENTIAL IS LOW.



BHQR = M; behavior quality is medium when behavior of some individuals is modified but all remain essentially non-habituated to man. Conflict potential is low to moderate. Foods are primarily natural items taken under free-ranging conditions, although some individuals occasionally use foods associated with man, such as domestic livestock carrion and black bear baits which are used in Wyoming.

MODERATE BEHAVIOR QUALITY

BEAR IS NOT HABITUATED TO MAN; FOODS ARE PRIMARILY NATURAL ITEMS, ALTHOUGH SOME INDIVIDUALS OCCASIONALLY USE FOODS ASSOCIATED WITH MAN (i.e. DOMESTIC LIVESTOCK CARRION). CONFLICT POTENTIAL IS LOW TO MODERATE.



BHQR = L; behavior quality is low when behavior of two or more individuals is modified and they are habituated to man. Conflict potential is moderate to high. Unnatural foods (garbage, camp groceries, and livestock) are used extensively by some, and the occurrence of such foods strongly influences distribution.

LOW BEHAVIOR QUALITY

BEAR IS HABITUATED TO MAN: FOODS ARE PRIMARILY OF UNNATURAL SOURCES (i.e. GARBAGE, GROCERIES, LIVESTOCK CARRION, ETC.); OCCURRENCE OF SUCH FOODS INFLUENCES SPECIES DISTRIBUTION; CONFLICT POTENTIAL IS MODERATE TO HIGH.



BHQR = 0; no behavior quality exists when behavior of two or more is modified to the extent that individuals are totally habituated to man and they have no fear of man. Conflict potential is extremely high. Unnatural foods are depended upon and such foods are aggressively pursued and taken wherever they occur.

AGGRESSIVE BEHAVIOR QUALITY

TOTALLY HABITUATED TO, AND HAVE NO FEAR OF, MAN; DEPENDENT ON AND AGGRESSIVELY PURSUE UNNATURAL FOODS; CONFLICT POTENTIAL IS EXTREMELY HIGH.

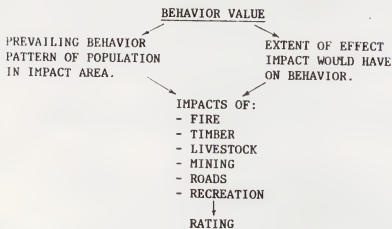


The appropriate BHQR value is entered in the blank under BHQR on Form 2.

Consequences Analysis Estimation

CAR requires estimation of the probable or necessary effects of proposed land use impacts on BHQR or the dominant behavior patterns apparently characteristic of the population or individuals in each impact area. Ratings reflect the extent to which land uses would likely affect existing behavior patterns.

CONSEQUENCE ANALYSIS SYSTEM - BEHAVIOR



NEGATIVE - AT LEAST ONE GRIZZLY WOULD BECOME HABITUATED TO MAN BY: DISRUPTION OF NATURAL FOOD SUPPLY; INTRODUCTION OF UNNATURAL FOODS; CONCENTRATING MAN IN AREAS PROVIDING NATURAL FOOD SOURCES OF HIGH DEMAND BY BEAR.

NEUTRAL - NO EFFECTS ON BEHAVIOR.

POSITIVE - AT LEAST ONE GRIZZLY WOULD BECOME LESS HABITUATED TO MAN BY: ENHANCEMENT OF NATURAL FOOD SUPPLY; PERMANENT REMOVAL OF UNNATURAL FOOD SUPPLY; REMOVE HIGH GRIZZLY-HUMAN CONFLICT POTENTIALS.

Rating categories are as follows:

Neg. = Negative effect on BHQR. Behavior of at least one grizzly would become modified to make it more habituated to man while no individuals would be made less habituated. This could occur through:

- (1) Disruption of normal food use patterns including food plant destruction and interference with use of normal feeding sites;
- (2) Introduction of and/or improper storage of unnatural food items and improper disposition of waste or garbage; this includes leaving dead livestock on open range to decompose or be eaten by wildlife, placing black bear baits, and leaving dead livestock or wildlife, which could attract grizzlies, along trails or roads.
- (3) High human concentrations in high grizzly use feeding areas (berry patches) causing aggressive bear responses or pursuit of less natural foods.

Negative CARs against FHQR, CHQR, and SHQR might warrant negative ratings against BHQR.

Neu. = Neutral effect on behavior habitat quality. Behavior would be unaffected by the proposed activity.

Pos. = Positive effect on behavior habitat quality. Behavior of at least one grizzly would become modified to make it less habituated to man while no individuals would be made more habituated. This could occur through:

(1) Enhancement of natural food use patterns and enhancement of habitat components providing food and cover;

(2) Permanent removal of unnatural food sources;

(3) Amelioration of conditions contributing to high grizzly-human conflict potential.

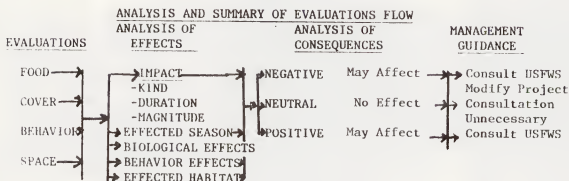
The appropriate behavior quality CAR value is placed in the blank under BHQR on Form 2. A verbal stratification of consequences is entered on Form 3.

SURVEY ANALYSIS

Summary information from data masters (Forms 1 and 2), representing habitat components and types evaluated in impact areas of proposed land use sites is transferred to corresponding summary scorecards (Form 6). Scorecards are grouped by impact areas and then by habitat components (Tables 1 and 2) and other habitat types within impact areas. Grizzly sighting and sign information (Forms 4 and 5) is included in the comments section of scorecards representing the component or type in which the activity or sign was noted.

Information on individual scorecards is summarized in the blanks provided when this can be meaningfully done. Generally, information from one scorecard should not be added to that of another. The system was not designed to produce totals yielding automatic decisions.

The relationships in each component or type between habitat quality and consequences should be carefully considered separately. Only after this has been done for each component or type should all scorecard information be put together into an analytic mosaic of the proposed use site. No single indicator should be looked to for finite answers at this overview level. Instead, general trends in relationships should indicate (1) the kind, magnitude and duration of probable impacts, (2) which season or seasons their probable effects would be most likely, (3) which of the grizzly's biological and behavioral needs would be most affected, and (4) which habitat components and types would be involved.



Consequence analysis ratings are not in themselves decisions. Negative ratings are mainly alerts or "red flags" which signal specific needs for and directions of project modification if proposed activities are to be pursued. Taken together, consequence ratings provide a thorough and reliable means of identifying how grizzlies and/or their habitat would likely be affected by alternative land uses. Such identification can facilitate an improved process of deciding among land use alternatives where grizzly preservation is a high priority.

REVIEW OF GRIZZLY ECOLOGY

FOOD

General

Food consists of all materials providing for the nutritional needs of the grizzly. With respect to food, grizzlies use diverse habitats. Grizzlies west of the continental divide in northwestern Montana and in the Yellowstone Park area and elsewhere along and east of the continental divide in Montana appear to represent two distinct groups, each occupying a different primary nutrient niche. (A primary nutrient niche refers to the relationship between grizzlies and the single nutrient from which most energy is derived during the year.)

Grizzly range west of the continental divide in northwestern Montana and northern Idaho includes primarily mountainous areas with a maritime climatic influence. Grizzlies in this range appear to derive most of their energy from sugar occurring in the fleshy fruits of huckleberry (*Vaccinium* spp.), mountain ash (*Sorbus* spp.) and buffaloberry (*Shepherdia canadensis*); burns producing these fruiting shrubs are the primary feeding areas (Husby et al., 1977; Mealey et al., 1977; Hamlin and Frisina, 1974; Martinka, 1972; Shaffer, 1971 and Tisch, 1961). Before and after shrublands produce fruit, the diet is probably dependent upon protein from succulent herbs and starchy underground plant parts which occur primarily in non-forested habitat components including avalanche chutes, sidehill parks, wet meadows, stream bottoms and other moist sites (Husby et al., 1977; Mealey et al., 1977). These components probably entirely replace shrublands as energy sources during years when fruits fail or in areas which lack fleshy fruit-bearing shrubs.

Grizzly range in the Yellowstone Park area and elsewhere along and east of the continental divide in Montana is more open and more xeric with a continental climate. Here, grizzlies derive most of their energy from protein in succulent, herbaceous vegetation, primarily grasses and sedges and secondarily the aerial parts of western springbeauty (*Claytonia lanceolata*), elk thistle (*Cirsium foliosum*) and clover (*Trifolium* spp.) (Mealey, 1977). Starch, from the underground parts of springbeauty (*Claytonia* spp.) and biscuitroot (*Lomatium* spp.) is also used in significant amounts (Sumner and Craighead, 1973; Mealey, 1977). Moist, fertile grasslands, herblands, stream bottoms, ridgetops, talus slopes and wet avalanche chutes, all interspersed with timbered areas, are the primary feeding sites and their locations appear to influence population distribution. In Yellowstone Park and on the Scapegoat Plateau, these components are used between 5,000 and 10,000+ feet, depending upon season and phenology (op. cit.).

West of Continental Divide

Table 1 shows grizzly food use as indicated by analysis of scats collected in 1975 and 1976. Fruits and berries were the diet mainstays. Stems and leaves of succulent grasses, sedges and Umbelliferae were also important. Grizzly food species and habitat components are as indicated in Table 1. Extensive definitions of habitat components and discussions of management implications are available in the references provided.

Husby et al. (1977), Mealey et al. (1977), Craighead et al. (1976), Erickson (1976 and 1975), Sumner and Craighead (1973) and Martinka (1972) provide data for the following summary. Succulent, new grass is the earliest and most important food used by grizzlies in spring following their emergence from dens. Some carrion and whitebark pine (*Pinus albicaulis*) nuts from caches are also used at this time. Grasslands on south and southwest facing slopes (sidehill parks) with early green-up, and snow-free, wet meadows and riparian edges are the primary feeding sites. In early June, grizzlies begin to feed on succulent herb tops (Umbelliferae). Feeding sites are primarily south slope avalanche chutes. In late June and early July, Umbelliferae tops and starchy roots of springbeauty and glacier lily (*Erythronium grandiflorum*) are eaten in north slope avalanche chutes and in other moist micro-sites in mesic forested habitat types including AF/Caca and AF/Luhi/Mefe. These north aspect and other mesic sites follow south slope avalanche chutes phenologically by three to four weeks. From mid-July to mid-September the primary foods in most of the region are huckleberries and buffaloberries which are eaten primarily in burns. On the Scapegoat Plateau the primary food during the same time are roots and corms. Stream bottoms, wet meadows and moist micro-sites, especially those with western sweetroot (*Osmorhiza occidentalis*) in the AF/Luhi/Mefe and AF/Clun forested habitat types, also provide succulent herbs as food. From late September to late October the primary food is the fruit of mountain ash which occurs in burns, avalanche chutes, snowfields and some logged sites. This food is supplemented by succulent herbs, which are generally uncommon at this time, and starchy roots taken on ridgetops. Food, from late October to denning in late November, consists of kinnikinnick (*Arctostaphylos uva ursi*) which is eaten in old burned areas, starchy herb roots which are used on ridgetops and flood plains and succulent herbs which are eaten in very moist micro-sites.

Yellowstone Park, Along and East of Continental Divide

Grasses and sedges were the primary foods used by grizzlies in Yellowstone Park in 1973 and 1974 (Table 2). Analyses of scats collected in 1975 and 1976 in and around the park has indicated a continuing trend in the use of grasses and sedges as primary foods. Springbeauty, elk thistle and clover are other important foods, although far less significant than grass and sedge. Grizzly food species are listed, as are grizzly habitat components (Table 2).

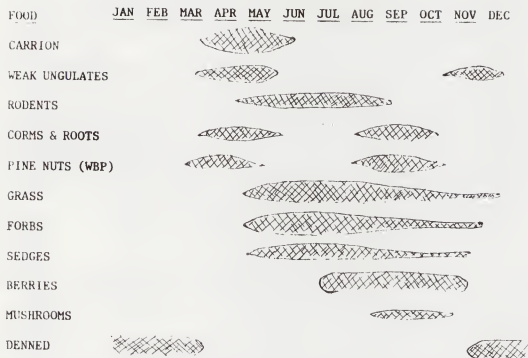
Grizzly use in relation to all the habitat components given, especially the forested types, has not been well documented. The forested types are inferred to be important primarily because of their moisture characteristics and the foods present.

Valley/plateau grassland/herblands (prairie) and subalpine grassland/herblands (park) have been described by Houston (1976), Craighead and Craighead (1972), Meagher (1973), Despain (1973), Gruell (1973), Mealey (1977) and Holdorf (1975). Excellent photographs of typical sites in the Yellowstone Park area are contained in Houston (1976) and Gruell (1973). Valley/plateau grassland/herblands in Yellowstone Park generally fit the Feid/Deca, Arca/Feid, and Feid/Agca grassland/shrubland habitat types (Graham, 1977). On the Lewis and Clark National Forest along the Rocky Mountain front, grassland/herbland fit the Pofr/Fesc, Fesc/Feid and Fesc/Agsp grassland/shrubland habitat types (Schallenberger, 1976). Subalpine grassland/herblands important to grizzlies in both areas appear to fit the Deca/Carex and Feid/Deca habitat types.

Stream bottoms, wet meadows and ridgetops are generally as described in Mealey et al. (1977). Burns are probably important to grizzlies primarily when they occur in the AF/Vagl habitat type. Forested and grassland/shrubland habitat types and communities are as described in Pfister et al. (1974), Mueggler and Handl (1974) and Cooper (1975).

The following summary is after Mealey (1977), Craighead and Craighead (1972) and Cole (1972). The general feeding cycle follows plant phenology. During the pre-growing season, April to the last of May, many grizzlies appear to be primarily meat eaters. They congregate on ruminant wintering areas and take any animal material available as carrion and kill vulnerable individuals. In addition, corms and roots in the valley/plateau grassland/herblands, and pine nuts in habitat types with whitebark pine are eaten prior to and during early green-up. During the growing season, in late May, June, July and August, grasses, sedges, forbs and rodents are used almost exclusively as food.

GRIZZLY USE AND PLANT PHENOLOGY



The first use of grasses and sedges occurs in late May in south or south-west facing grassland/herblands, snow-free meadows and riparian edges. Use of herbs, primarily grass, as the most important food, reaches high levels in June, peaks in late July and extends through early September. Succulent vegetation is preferred and its availability, linked with that of rodents, influences grizzly distribution. During normal precipitation years, most herbaceous food plants in mesic situations in grassland/herblands and the S/Eqr, S/Gatr, AF/Gatr and AF/Caca forested habitat types remain succulent throughout summer months. As a result, grizzlies are widely distributed with respect to these foods. They feed primarily in open areas having adjacent cover. During the post-growing season, September to denning, grasses and forbs remain important foods but their use is confined to moist sites usually in small forest openings and edges, stream bottoms and wet meadows, and distribution is more narrowly restricted to them. Pine nuts, roots, corms, fruits, berries, and mushrooms (*Russula* spp.) become available in ridgetops and alpine and subalpine areas. Use of these areas and the AF/Vagl, AF/Vasc/Pial and WBP forested habitat types increases as grasses, sedges and forbs desiccate in grassland/herblands. Predation on male, breeding elk (*Cervus canadensis nelsoni*) also occurs.

Grizzlies appear adapted primarily to the most constant and abundant food energy source in their environment: protein from succulent herbs and animal material from open fertile grass/herblands with adjacent cover.

Grizzlies are active day and night during early spring when food is relatively scarce. In summer, with relative food abundance, they rest during daylight hours and feed at night. In autumn with food again relatively scarce, they forage intermittently day and night (Craighead and Craighead, 1972). During wet years with a high abundance and availability of succulent vegetation as food, grizzlies are not likely to be highly visible during summer because most feeding probably occurs at night or under the cover of forest canopy. During dry years, bears are likely to be more visible during summer because succulent vegetation is more limited and more time is necessary for foraging in open areas for roots, corms, rodents and vegetation.

Food Plant Ecology

Grizzly food plants, as a group, are generally perennials with high survivability under natural conditions. Many are "hydrophytic" (water-loving) and occupy very wet sites which generally assures stable moisture supplies and abundant growth. Others are "geophytic" (ground-loving) and are either deep or fleshy rooted or both. This assures stable annual growth patterns through storage of high levels of energy and protection from erosion and drought. Many food plants are both hydrophytic and geophytic and are adapted to withstand most naturally occurring disturbances such as wildfire, temporary water shortages, and grazing. As a result, they are stable food sources.

Most of the more important herbaceous grizzly food plants listed in Tables 1 and 2 are also listed by the USFS (1969) as desirables or species of undisturbed or climax plant communities. Desirables are usually good forage plants and are the first to show effects of heavy domestic livestock grazing and other unnatural disturbances. In cases of severe disturbances, especially those which unnaturally affect soil, desirables are usually replaced by intermediates and least desirables (op. cit.). With few exceptions desirables are deep-rooted, provide good ground cover, and reduce soil movement (op. cit.).

Shrubs listed in Tables 1 and 2 as grizzly food species occur as components of both seral and climax plant communities and are highly intolerant of and vulnerable to severe man-caused soil disturbances.

Land Use Implications For Grizzly Foods

Fire Management - As indicated, most grizzlies west of the continental divide appear to derive most of their energy from the fruits of shrubs, primarily huckleberry, buffaloberry and mountain ash. Burns resulting from wildfires in this century are the primary producers of important fruiting shrubs and appears to be the most important source of grizzly food energy. In most of the region, burns are probably the single most important grizzly habitat component.

Lightning caused fires are estimated to occur on the average at least once a century in any given part of the northern U.S. Rocky Mountains west of the divide (Arno, 1977). This natural fire frequency appears necessary to maintain or expand the burn component. Controlled or managed burning in habitat types which are not suitable for timber production above 5,800 feet elevation could approximate a natural fire frequency (Mealey et al., 1977; Erickson, 1976). The WBP/AF, AF/Luhi/Mefe, AF/Luhi/Vasc, and AF/Xete/Vagl forested habitat types could be considered for treatment. The AF/Vagl habitat type in the Yellowstone area east of the divide could also be considered for treatment. Fire management planning including such measures could facilitate grizzly habitat maintenance and improvement.

Timber Harvest - In grizzly range west of the divide in the AF/Clun/Mefe habitat type, timber harvest, especially partial cuts and clearcuts with no dozer-piling of slash and no mechanical soil scarification, produce important amounts of shrubs bearing fruits eaten by grizzlies (Mealey et al., 1977). Production of grizzly food species is greater than in uncut sites in the same habitat type. This indicates that certain timber harvest practices can be applied in some commercial forest stands causing their grizzly food value to increase. Composition and coverage of grizzly food species in clearcuts which have been broadcast burned and are without extensive soil scarification are comparable to those of the natural burn component. This indicates that such man-made openings can become the vegetative equivalents of burns (op. cit.).

Grizzly habitat west of the divide can probably be expanded or enhanced by creating high food producing openings in low grizzly food producing commercial forest habitat types below 5,800 where normal grizzly use appears light. Habitat types and series for consideration are AF/Clun/Mefe, AF/Clun/Xete, AF/Clun/Clun, AF/Clun/Arnu, AF/Opho, and the Thuja and Tsuga series (op. cit.). East of the divide in the Yellowstone Park region, the AF/Vagl habitat type could be considered for treatment.

Group selection cuts and small (10-20 acres) irregularly shaped clearcuts in which prescribed fire is used to duplicate wildfire treatment appear desirable for creating high grizzly food producing openings. Desirable clear-cut features include one or more leave or cover patches in larger cuts, minimum soil scarification (20 percent or less, preferably in a strip configuration) and slash disposal by broadcast burning or possibly no slash disposal. Yarding methods should minimize soil disturbance. Public access to harvest areas during and after treatment should be managed to minimize the potential for disturbance of grizzlies. Disturbance resulting from unmanaged road use could negate the habitat improvement value on man-made openings (op. cit.; Erickson, 1976).

West of the divide, timber harvest in the high food producing, low commercial value forest habitat types above 5,800 feet elevation appears to damage grizzly habitat by interfering with herbs and shrubs (western sweet-root and huckleberry) in moist micro-sites. The main habitat type affected is AF/Luhi/Mefe which has a slow disturbance recovery rate due to cold, severe climate. Below 5,800 feet, clearcuts in the AF/Clun habitat types where slash has been dozer piled and more than one-third of the surface soils have been machine scarified appear to be very poor grizzly habitat. The extensive soil disturbance on these sites resulting from dozer slash piling and soil scarification appears to have destroyed or delayed the establishment of plants which provide grizzly food and cover (Mealey et al., 1977).

Livestock Grazing - Most herbaceous grizzly food plants are also listed as forage plants for domestic livestock (USFS, 1969). Domestic livestock, using grazing allotments in grizzly habitat, show highest preferences for components and foods important to grizzlies (Mealey et al., 1977; Schallenger, 1976). Important components are wet meadows, stream bottoms, aspen groves and avalanche chutes with their succulent grasses, sedges and forbs (op. cit.).

Domestic livestock graze in the important wet components with much greater efficiency than that of grizzlies; they also occur in greater densities in these preferred feeding sites thus consuming more forage and causing far greater on-site physical alterations through, for example, trampling. As a result of these factors, livestock use can remove critically important food production areas from grizzlies (op. cit.). Management programs for domestic livestock grazing in grizzly habitat should reflect the potential for food competition between grizzlies and livestock. They should also reflect the ability of livestock to win such competition. Domestic livestock grazing should be managed to protect important grizzly foods and the habitat components which produce them.

Mineral Exploration, Road Construction and Recreation - These activities combined have the potential for physical site alteration and increased human activity in grizzly habitat. Both of these effects can be undesirable with respect to grizzlies in that (1) grizzly-human conflict potential may be increased, (2) human presence may interfere with grizzly use of important habitat components while not altering the components physically, and (3) physical alteration of components may occur which could negate their value to grizzlies.

Any proposals for the above human use activities should take into account the occurrence of important grizzly habitat components in or near proposed use areas. Highest potential for human-grizzly conflicts exists when human activities are superimposed on or near areas providing for essential grizzly needs. Therefore, it should be assumed that avoidance of such superimposition would reduce conflict potential. Principles applying to physical site alterations would be generally the same as those discussed under timber harvest and livestock grazing, e.g., soil scarification, forage removal and other human activities in or near prime grizzly use areas that could promote human/grizzly encounters should be minimized.

Cover

Cover is a combination of vegetative and topographic features which provide for the grizzly's security and denning needs. Considerations of den site location requirements will not be emphasized in this methodology because of ambiguity in current scientific understanding. For example, Craighead and Craighead (1972) found indications that bears prefer northerly exposures, but recent data (Knight, 1977; Jonkel et al., 1977) from other studies in different locations indicate that other exposures and less isolated areas are used. However, all known den sites are in areas that normally receive heavy snowfall (Knight, 1977; Craighead and Craighead, 1972).

Although the grizzly probably evolved in open or non-forested areas and appears to be behaviorally (Herrero, 1972) and nutritionally (Mealey, 1977) adapted to them, optimum habitat appears to include extensive timbered areas which presumably provide security cover (Knight et al., 1976; Craighead and Craighead, 1972) adjacent to or continuous with grassland/herbland, shrubland or other open-site feeding areas. Whether required or not, timbered areas are where grizzlies spend most of their time, at least when not feeding. Most winter dens, and daybeds used for resting between feeding periods, are located in thickets of spruce, fir and lodgepole pine (Craighead and Craighead, 1972). Personal observation indicate that daybeds are nearly always located in relatively open timber stands immediately adjacent to open area feeding sites. Such open stands provide adequate day cover for the apparent reasons that daybeds are shallowly excavated (1-18 inches) thus lowering the individual's profile and normal grizzly coloration blends well with normal understories.

Space

Space is a species' communal home territory, the size of which is determined by the cruising radius of the species. This home territory must contain all of the species' requirements - food, cover and water, for both sexes and all age classes, for all seasons and for all the species' activities (King, 1938). In general, the amount of space used by a population or individual in any given habitat appears to be primarily a function of interspersions of types, or the arrangement in any given area, of food, cover and water which meet all the animal's physical and behavioral needs. In the case of grizzlies, the more compact and efficient the arrangement of necessary components, the smaller the amount of space used. Home range sizes vary from an average area of 5.5 square miles on Kodiak Island where salmon, berries, riparian vegetation and denning sites are closely grouped (Berns and Hensel, 1972) to an average area of 41.9 square miles in Yellowstone Park (Craighead and Craighead, 1972; Erickson, 1976) where seasonal habitat components are widely separated.

In the northwestern U.S. south of Canada, the amount of space used by grizzlies appears to be directly related to the interspersions of habitat components and vegetative diversity within the different habitats. Individual grizzlies in northwestern Montana on the Flathead National Forest appear to use far less space than grizzlies east of the divide in and around Yellowstone Park. Standard diameters computed on entire home ranges of grizzlies west of the divide compare only to relatively small areas of seasonal grizzly activity east of the divide (Knight, 1977; Jonkel et al. 1977). In some cases home ranges in the Yellowstone area appear to be 3-4 times greater than those on the Flathead National Forest. Grizzly range west of the divide, where grizzlies use less space, has a moist, maritime climate and steep precipitous terrain. These conditions appear to account for the high type interspersions and high ecological and vegetative diversity (more diverse habitat types and components compacted into smaller areas) characteristic of the area. By comparison, grizzly range in the Yellowstone area, where grizzlies use more space, has a much drier continental climate and more uniform relief with much of the area dominated by broad, undulating plateaus. As a result, interspersions of types and vegetative diversity appear much less. For example, only six forested habitat types of apparent importance to grizzlies exist east of the divide, while west of the divide there are twelve important types (Tables 1 and 2).

Regardless of home range size, space or home territory must contain all of the different types of cover and the various kinds of foods needed during the different seasons for the various activities of the several age classes in the population (King, 1938). In the Yellowstone area, and elsewhere along the continental divide, this includes ruminant wintering grounds, early spring green-up areas, wet meadows, grassland/herblands, alluvial bottoms and parklands, hydric forested areas, WBP timber types, talus slopes, wet avalanche chutes and high alpine/subalpine ridgetops. All of these components will be dispersed over large areas. West of the divide the components will be sidehill parks, avalanche chutes, burns, wet meadows, stream bottoms, ridgetops and mesic and hydric forested types all interspersed in smaller areas.

Behavior

Behavior is the manner or way in which a species, population or individual conducts its activities. Apparent natural or pristine grizzly behavior usually is expressed through a total dependence upon natural foods under free-ranging conditions. This normally means that bears are not adapted to contacts with man and usually flee from him under most circumstances. Human-grizzly conflict potential is usually low.

Grizzlies that forage on human food, garbage, crops or livestock in close proximity to people become habituated to people (Herrero, 1976). This modified behavior increases grizzly-human conflict potential which threatens both human safety and grizzly bear preservation.

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APPENDIX



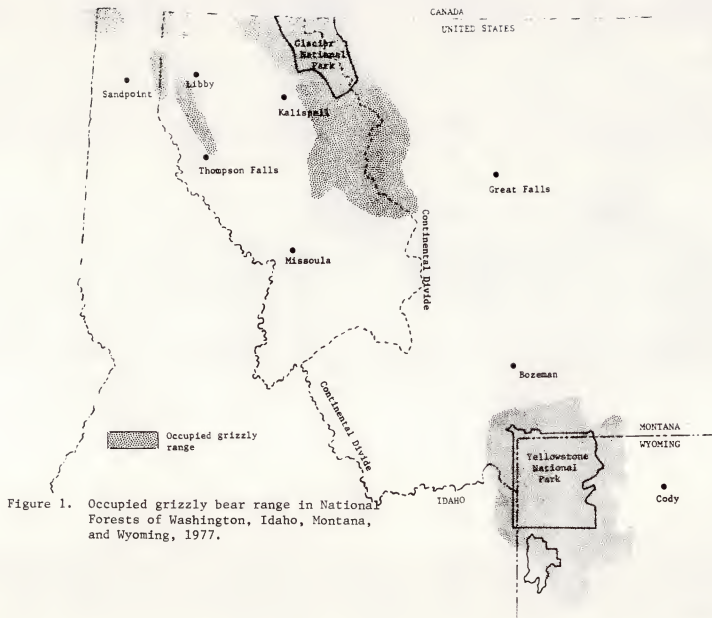




TABLE 1. GRIZZLY BEAR FOOD USE, FOOD SPECIES, AND GROSS NUTRIENT COMPONENTS WEST OF THE CONTINENTAL DIVIDE IN A BROWNWOOD MOUNTAIN AND WESTERN IDAHO AS THEY APPEARED IN 1975 AND 1976.

Food Use ¹		Importance Value ²	Grizzly Food Species ²	Grizzly Habitat Components ³
Food Items	Use			
Fruits and Berries		46.0	Trees	Non-forested Areas
	<i>Vaccinium globulare</i> 39.8		<i>Picea sitchensis</i>	Avalanche Chutes
	<i>Sorbus</i> spp. 22.2		Shrubs	Stream Bottoms
	<i>Shepherdia canadensis</i> 11.9		<i>Amelanchier alnifolia</i>	Wet Meadows
	<i>Arctostaphylos uva-ursi</i> 10.1		<i>Arctostaphylos uva-ursi</i>	Burns
	<i>Cornus stolonifera</i> 5.7		<i>Cornus stolonifera</i>	Sidwell Parks
	<i>Vaccinium scoparium</i> 2.0		<i>Lonicera involucrata</i>	Ridgetops
	<i>Rhamnus alnifolia</i> 2.0		<i>Lonicera utahensis</i>	
	<i>Dioporus trachycarpus</i> 1.5		<i>Ribes</i> spp.	Forested Habitat Types
	<i>Rosa</i> spp. 1.5		<i>Rosa</i> spp.	(Mesophytic herb understorey)
Grass and Sedge	Stems and leaves	27.7	<i>Salix</i> spp.	AF/Gace / <i>Abies lasiocarpa</i> / <i>Clintonia canadensis</i>
Umbelliferae	Stems and leaves	13.0	* <i>Shepherdia canadensis</i>	AF/Luhl/Male / <i>Abies lasiocarpa</i> / <i>Clintonia uniflora</i>
Ericaceae	Stems	4.0	* <i>Sorbus</i> spp.	<i>Vaccinia ferruginea</i>
Fernicides		2.0	* <i>Vaccinium globulare</i>	AF/Clun/Male / <i>Abies lasiocarpa</i> / <i>Clintonia uniflora</i>
Roots			<i>Vaccinium scoparium</i>	<i>Vaccinia ferruginea</i>
	Umbelliferae and <i>Erythronium grandiflorum</i>	1.0	<i>Vaccinium canadense</i>	AF/Clun/Arnu / <i>Abies lasiocarpa</i> / <i>Clintonia uniflora</i>
Driftwood spp.	Stems and leaves	1.0	Forbs and Ferns	<i>Arnica montana</i>
Tamaricum spp.	Stems and leaves	1.0	<i>Angelica</i> spp.	S/Clun/Clun / <i>Picea</i> / <i>Clintonia uniflora</i> / <i>Clintonia uniflora</i>
<i>Picea sitchensis</i>	Nuts	1.0	<i>Arnica montana</i>	WRC/Clun/Clun / <i>Picea</i> / <i>Clintonia uniflora</i> / <i>Clintonia uniflora</i>
Miscellaneous		1.3	<i>Astragalus robbinsii</i>	
			<i>Castilleja</i> spp.	(Mesophytic fruiting shrub understorey)
			* <i>Claytonia</i> spp.	AF/Xeta/Vegl / <i>Abies lasiocarpa</i> / <i>Terophyllum tenax</i>
			<i>Clintonia</i> spp.	<i>Vaccinium globulare</i>
			<i>Dioporus trachycarpus</i>	AF/Libo/Xeta / <i>Abies lasiocarpa</i> / <i>Limnium boreale</i>
			<i>Shepherdia canadensis</i>	<i>Terophyllum tenax</i>
			<i>Erythronium grandiflorum</i>	DF/Xeta/Vegl / <i>Pseudotsuga menziesii</i> / <i>Terophyllum tenax</i>
			<i>Prunella</i> spp.	<i>Vaccinium globulare</i>
			<i>Pritchardia pudica</i>	AF/Clun/Xeta / <i>Abies lasiocarpa</i> / <i>Clintonia uniflora</i>
			<i>Redstart</i> spp.	<i>Terophyllum tenax</i>
			* <i>Berchemia lanata</i>	AF/Xeta/Vac / <i>Abies lasiocarpa</i> / <i>Terophyllum tenax</i>
			<i>Lomatium</i> spp.	<i>Vaccinium scoparium</i>
			<i>Ligustrum</i> spp.	
			<i>Comarostaphylis occidentalis</i>	(Xeric - Pine nuts and starchy-rooted forbs)
			<i>Polygonum bistortaoides</i>	WBR/AF / <i>Picea sitchensis</i> / <i>Abies lasiocarpa</i>
			<i>Polypodiaceae</i>	
			<i>Rumex</i> spp.	
			<i>Rumex</i> spp.	
			<i>Semiothisa tripartita</i>	
			<i>Shepherdia</i> spp.	
			<i>Tamaricum</i> spp.	
			<i>Driftwood</i> spp.	
			<i>Vaccinium veride</i>	
			<i>Greenstone</i>	
			* <i>Caner</i> spp.	
			* <i>Grass</i> spp.	
			<i>Helianthus spectabilis</i>	
			Mammal and Insect	
			Cervidae	
			Ursidae	
			Rodentia	
			Formicidae	

¹From: Husby et al. (1977).

²From: Husby et al. (1977), Mesley et al. (1977), Martinka (1972), Tisch (1961).

³From: Mesley et al. (1977), Erickson (1976), Erickson (1975), Pfister et al. (1974), Martinka (1972), Jonkel and Cowan (1971), Tisch (1961).

*Foods of primary importance.



TABLE 1. GRIZZLY BEAR FOOD USE, FOOD SPECIES, AND HABITAT COMPONENTS IN ALPINE AREAS AND AREAS ALONG AND EAST OF THE CONTINENTAL DIVIDE IN MONTANA AND NORTHWESTERN WYOMING AND ADJACENT ENVIRONS AS THEY APPEARED DURING THE PERIOD 1973-1976

Food Item	Food Use ¹	Importance Value 1	Grizzly Food Species ²	Grizzly Habitat Component ³
Grass and Sedge		78.5	Trass	Non-forested Areas
	Grass 95%		<i>Pinus albicarpa</i>	Valley/plateau grassland/herbland**
	Sedge 5%		Shrubs	Subalpine grassland/herbland**
<i>Claytonia lanceolata</i>	Entire	6.1	<i>Arctostaphylos uva-ursi</i>	Alpine herblands
<i>Citrus folium</i>	Stems and hands	4.4	<i>Cornus spicata</i>	Stream Bottoms
<i>Trifolium repens</i>	Stems and leaves	2.4	<i>Lonicera hispidula</i>	Wet Meadows
<i>Salix elaeagnifolia</i>	Entire	1.7	<i>Lonicera hispidula</i>	Burns
Unidentified	Roots	1.7	<i>Picea</i> spp.	Ridgetops
	<i>Perideridia gairdneri</i> 54%		<i>Rosa</i> spp.	Talus Slopes
	<i>Lonicera hispidula</i> 46%		<i>Chaparral canadensis</i>	Avalanche Chutes
Rodentia	Entire	1.3	<i>Sorbus</i> spp.	Forested Habitat Types
	<i>Thomomys talpoides</i> 61%		<i>Vaccinium globulare</i>	(Mesophytic herb understory)
	<i>Microtus</i> spp. 35%		<i>Vaccinium scoparium</i>	S/Egr (Pine) <i>Equisetum arvense</i>
Cervidae/Bovidae	Entire	1.3	Forbs and Ferns	S/Gatr (Pine) <i>Galium triflorum</i>
	<i>Cervus canadensis</i> 90%		<i>Angelica</i> spp.	AF/Gatr (<i>Abies lasiocarpa</i> / <i>Galium triflorum</i>)
	<i>Odocoileus hemionus</i> 8%		<i>Claytonia</i> spp.	AF/Caca (<i>Abies lasiocarpa</i> / <i>Claytonia canadensis</i>)
	<i>Blechnum sp.</i> 12%		<i>Citrus folium</i>	(Mesophytic fruiting shrub understory)
<i>Malva spectabilis</i>	Corolla	.75	<i>Equisetum arvense</i>	AF/Vagl (<i>Abies lasiocarpa</i> / <i>Vaccinium globulare</i>)
<i>Equisetum arvense</i>	Stems	.35	<i>Erythronium grandiflorum</i>	<i>Vaccinium globulare</i>
<i>Pinus albicarpa</i>	Nuts	.48	<i>Prunella</i> spp.	(Xeric - pine nuts and starchy-rooted forbs)
<i>Vaccinium scoparium</i>	Berries	.37	<i>Prunella pulchra</i>	AF/Vasc/Pial (<i>Abies lasiocarpa</i> / <i>Vaccinium scoparium</i>)
			<i>Hemerocallis</i>	<i>Pinus albicarpa</i>
			<i>Lonicera</i> spp.	WRF/Vasc (<i>Pinus albicarpa</i> / <i>Vaccinium scoparium</i>)
			<i>Ligustrum</i> spp.	
			<i>Oenothera occidentalis</i>	
			<i>Perideridia gairdneri</i>	Other Forested Communities
			<i>Polygonum bistorta</i>	Aspen and associated grasslands
			<i>Polypodiaceae</i>	
			<i>Rumex</i> spp.	Grassland/Shrubland Habitat Types
			<i>Senecio triangularis</i>	Associated with Non-Forested Areas
			<i>Smilacina</i> spp.	
			<i>Thymus</i> spp.	ee Field/Deca - (<i>Festuca idahoensis</i> / <i>Deschampsia cespitosa</i>)
			<i>Trifolium</i> spp.	Field/Agce - (<i>Festuca idahoensis</i> / <i>Agropyron spicatum</i>)
			<i>Veronica</i> spp.	Fesc/Agsp - (<i>Festuca subrepens</i> / <i>Agropyron spicatum</i>)
			<i>Veronica</i> spp.	Fesc/Field - (<i>Festuca subrepens</i> / <i>Festuca idahoensis</i>)
			<i>Graminoids</i>	Arce/Field - (<i>Artemisia cana</i> / <i>Festuca idahoensis</i>)
			<i>Quercus</i> spp.	Poir/Fesc - (<i>Potentilla fruticosa</i> / <i>Festuca subrepens</i>)
			<i>Graminids</i>	
			<i>Malva spectabilis</i>	ee Deca/Carx - (<i>Deschampsia cespitosa</i> / <i>Carx</i> spp.)
			Animal and Insect	Field/Deca - (<i>Festuca idahoensis</i> / <i>Deschampsia cespitosa</i>)
			* Cervidae	
			* Ursidae	
			* Rodentia	
			* Formicidae	
			Piceae	

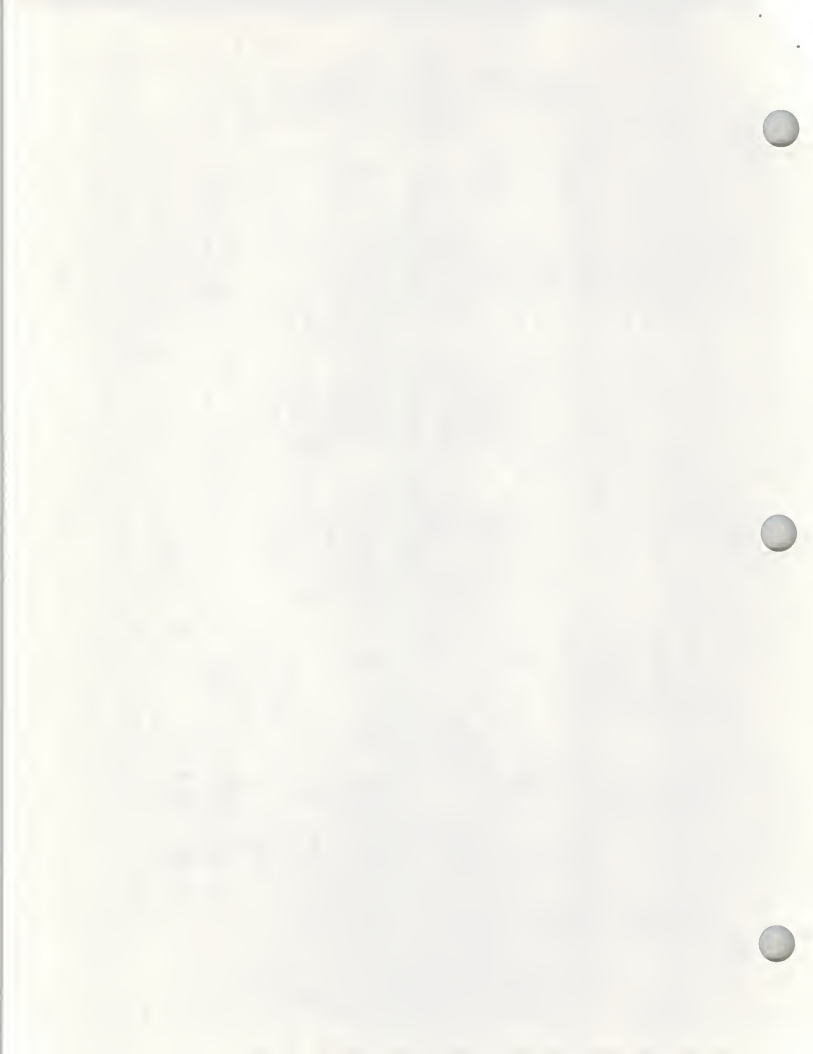
¹From: Healey (1977).

²From: Healey (1977), Sumner and Craighead (1973), Craighead and Craighead (1972), Hornocker (1962), Murie (1944).

³From: Craighead et al. (1976), Knight et al. (1976), Healey (1976), Schellenberger (1976), Healey (1977), Knight et al. (1975), Cooper (1975), Huggler and Handl (1974), Pfister et al. (1974), Sumner and Craighead (1973), Craighead and Craighead (1972), Hornocker (1962).

*Foods of primary importance.





FORM 2. GRIZZLY BEAR HABITAT QUALITY AND CONSEQUENCE ANALYSIS EVALUATION
MASTER, SPACE AND BEHAVIOR.

No. _____, Impact Area: _____, Proposed Use: _____

	Space		Behavior	
	SHQR	CAR*	BIQR	CAR*
Spring				
Summer				
Autumn				

Comments:

* Give verbal rationale for each EAR on Form 3.



FORM 3. VERBAL STRATIFICATION OF CONSEQUENCES

Objective: Provide a verbal rationale for each CAR. Explain the magnitude of each probable effect. For example, the following questions should be answered: Will the effect likely be short-term or long-term? Do alternative components exist? Will the effect be reversible with or without mitigation? What are feasible mitigation measures; and will a significant area be affected? Explanations must be given of the extent to which an effect will be positive, negative or neutral.

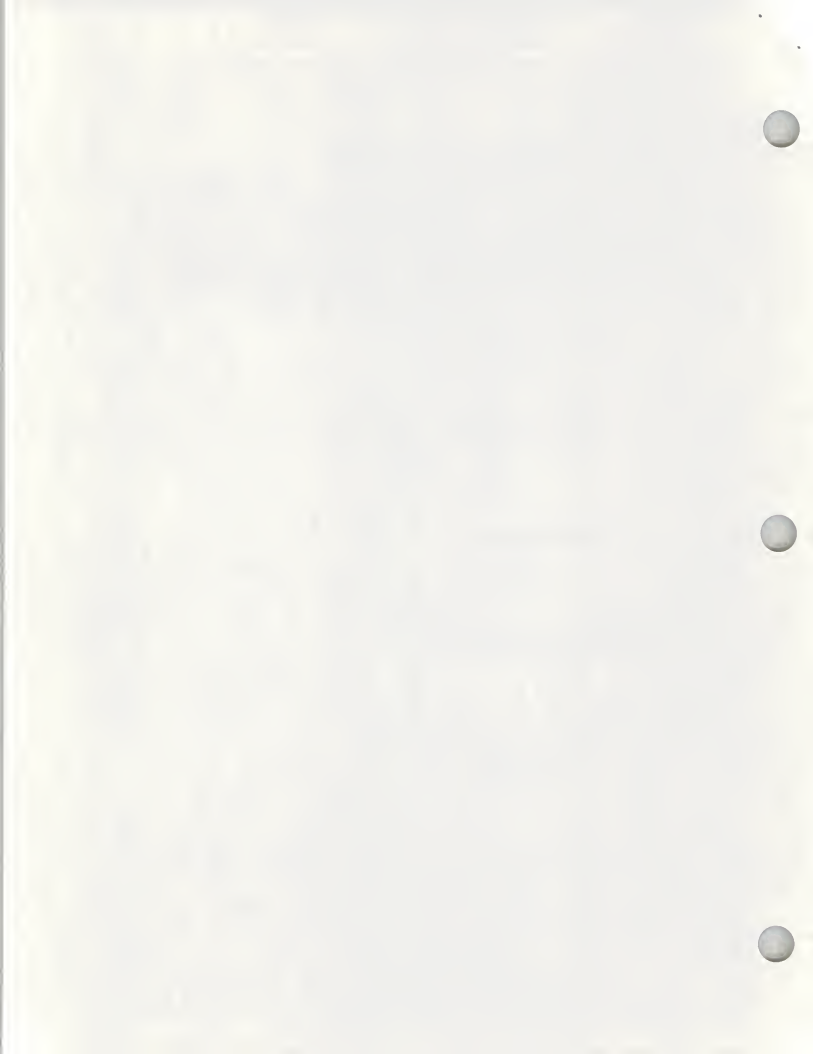
1. Food CAR Stratification:

2. Cover CAR Stratification:

3. Space CAR Stratification:

4. Behavior CAR Stratification:

Other comments, Continued:



FORM 4. GRIZZLY BEAR ACTIVITY REPORT.

Date:

Time:

Observer:

Source of information:

Activity type:

Actual grizzly _____; Track _____;

Scat _____; Digging _____; Hair _____;

Other _____;

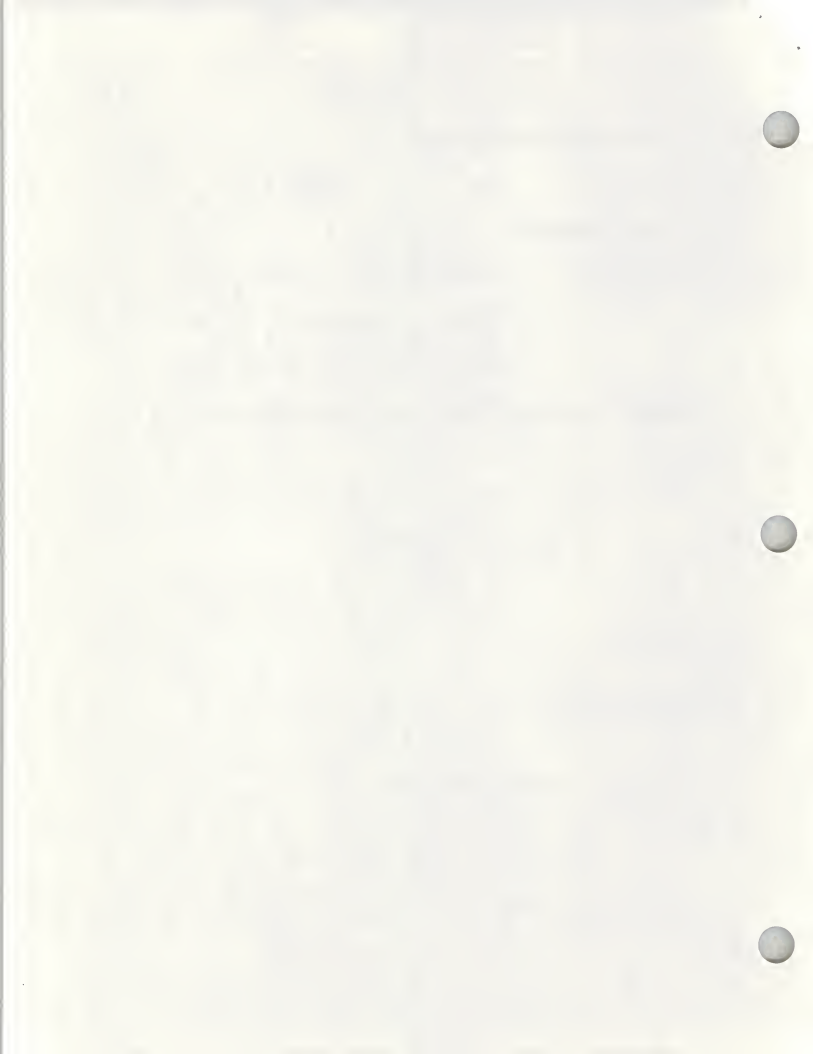
Description: (age, number, color, size, volume, contents, activity, etc.)

Location:

Vegetation:

Habitat component or type:

Topography: (terrain, elevation, aspect, etc.)



FORM 5.

BEAR SIGHTING AND/OR IDENTIFICATION REPORT.

- I. Sighted by _____ Address _____
- II. Sighting date _____ Time _____
- III. Sighting location _____

IV. Description of bear(s):

A. Species: As reported verified by- _____

Grizzly ☐ ☐  

Black ☐ ☐

Unknown ☐ ☐

B. Number of bears seen by size and coat color:
(also describe any identifying ear tags or markers)

Predominant coat color:

Weight in pounds-

	10-50	50-100	100-200	200-400	Over 400
1 - black					
2 - reddish-brown					
3 - gray					
4 - dark brown (chocolate)					
5 - light brown (tan)					
6 - blonde (white-yellow)					
7 -					

C. Diagram coat color pattern of female/young groups only, using colors 1 to 7 above.



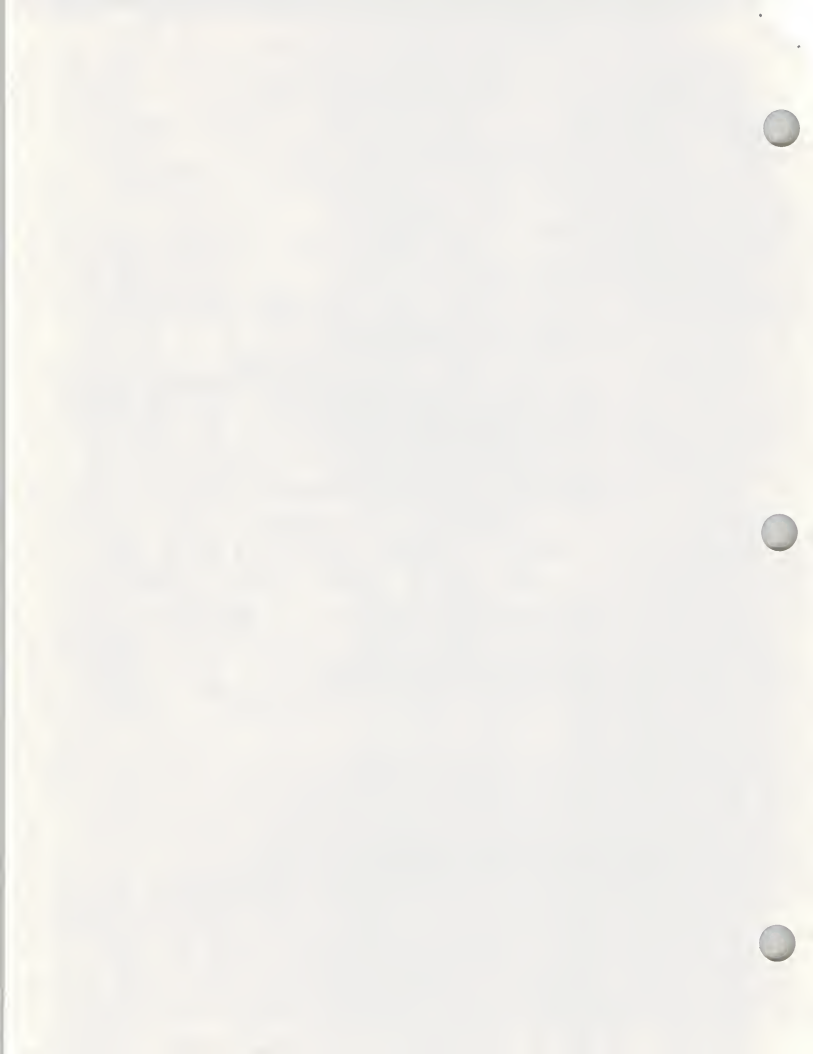
D. Activities of bear(s): Preying on _____ Scavenging on _____
Digging _____ Grazing _____ Other _____

V. Report filled out by _____
at (location) _____ on (date/time) _____

Notified (date/time):

Dist. Ofc. _____

Cubs-of-bear are usually less than 1/4 of female size, or 10-50 lbs;
 Yearlings, 1/4-1/2 of female size, or 50-100 lbs.
 2-year-olds, 1/2-3/4 of female size, or 100-200 lbs.
 Small adult bears are 100-200 lbs; medium adults, 200-400 lbs; large adults, 400+ lbs.



FORM 6. GRIZZLY BEAR HABITAT QUALITY AND CONSEQUENCE ANALYSIS SCORECARD.

No. _____, Habitat Component or Type _____, % of Impact Area _____

	Food		Cover		Space		Behavior		Season Summary
	FHQR	CAR	CHQR	CAR	SHQR	CAR	BHQR	CAR	
Spring									
Summer									
Autumn									
Important Ruminant, Rodent or Fish Area									
Suspected or Known Den Sites									
Annual Summary									

Comments:



SURVEY CHECKLIST

I. Before Data Collection:

---Off-site procedures---(Office)

1. Delineate Extensive Survey Area on 1:62,500 USGS Map.
 - a) Get a general overview.
2. Delineate Intensive Survey Area on 1:23,674 USGS Map.
 - a) Get specific information on proposed land use and grizzly use.
3. Delineate Primary and Secondary Impact Areas of 1:23,674 USGS Map.
 - a) Obtain and accurately map locations of all habitat components and other habitat types and all prominent geophysical features.
4. Establish General Sampling Strategy.
 - a) Determine plot numbers and locations.
 - b) Establish sampling schedule.

---On-site procedures---(Field)

5. Refine 1-4 above as necessary to reflect actual situations on the ground.

II. Data Collection:

1. Evaluate food and cover using sample plots. Five plots are sampled in each habitat component or other habitat type present in each impact area. Use appropriate conversion and value systems in footnotes on Form 1. Photograph plots each sample period (spring, summer, autumn) to document phenological changes.
2. Evaluate behavior and spatial use, using impact areas as points of reference.
3. For food and cover, estimate consequences of effects on sample groups as a whole or components or types represented by them rather than on individual plots. For behavior and spatial use, estimate effects on impact areas.
4. Stratify consequences verbally.

III. Data Analysis:

1. Analyze data from perspective of trends rather than totals.

DATA COLLECTION PROCEDURE SUMMARY

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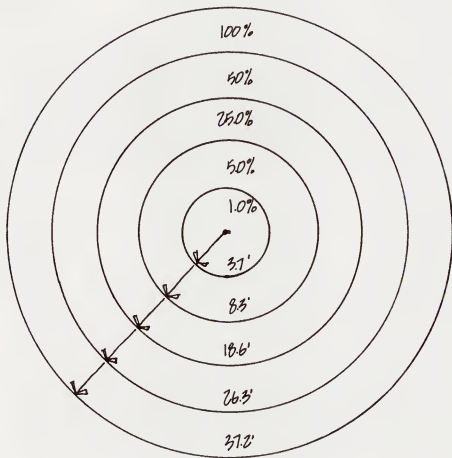
	Primary Impact Area	Secondary Impact Area	Intensive Survey Area	Extensive Survey Area
General Requirements	Refined mapping of vegetation by habi- tat type. Refined mapping of Grizzly use areas including habitat components and important topo- graphic features. Mapping of proposed land use impact zone. Highlight areas of overlap.	→	Analyses of appropriate materi- als to gain specific information about grizzly habitat, vegetation and terrain. Mapping of grizzly habitat and area affected by proposed land use.	Off-site analyses of aerial photos, maps and records to gain general overview of of grizzly status, vegetation, terrain and land use history.
Food	Sample five plots in each grizzly habitat component and each other habi- tat type present. Plots sampled spring, summer and autumn. Use Forms 1 & 3.	* →	Represented by samples from impact areas.	→
Cover	↓ Same plots used to sample food provide cover data. Use Forms 1 & 3.	→	↓	→

DATA COLLECTION PROCEDURE SUMMARY (Continued)

	<u>Primary Impact Area</u>	<u>Secondary Impact Area</u>	<u>Intensive Survey Area</u>	<u>Extensive Survey Area</u>
Space	One estimate each season: spring, summer and autumn based on impact area as a whole rather than plots. Use Forms 2 & 3.		Represented by estimates from impact areas.	
Behavior				
Activity and Sign	One search each season: spring, summer and autumn based on impact area as a whole. Use Forms 4 & 5.		Represented by information from impact areas.	

- * If a habitat component or other habitat type is continuous throughout both impact areas, it is sampled with only one five plot group distributed through both impact areas.

AREA DETERMINATION ON A
1/10 ACRE PLOT





United States Department of the Interior
FISH AND WILDLIFE SERVICE

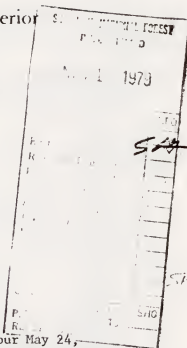
MAILING ADDRESS:
Post Office Box 25486
Denver Federal Center
Denver, Colorado 80225

STREET LOCATION:
134 Union Blvd.
Lakewood, Colorado 80225

IN REPLY REFER TO

FA/SE/FS--Guidelines for
Grizzly Ngmt. in Greater
Yellowstone (6-1-79-F-100)

NOV 5 1979



Mr. Craig W. Rupp
Regional Forester
Rocky Mountain Region
P.O. Box 25127
Lakewood, Colorado 80225

Dear Mr. Rupp:

This is our biological opinion prepared in response to your May 24, 1979, request for formal consultation on the Guidelines for Management Involving Grizzly Bears in the Greater Yellowstone Area. We have examined the document in accordance with the Section 7 "Interagency Cooperation Regulations" (50 CFR 402, 43 FR 870) and the Endangered Species Act Amendments of 1978.

BIOLOGICAL OPINION

It is our biological opinion that implementation of the Guidelines for Management Involving Grizzly Bears in the Greater Yellowstone Area will promote the conservation of the grizzly bear.

BASIS OF OPINION

The Guidelines offer sound recommendations for developing programs to aid in the conservation of the bear and for eliminating or minimizing human/grizzly conflicts causing adverse impacts to the bear or its habitat. Coordination of programs and activities, through the use of the guidelines, should aid the Forest Service and National Park Service in meeting their responsibilities to conserve this species. The degree to which the grizzly bear will benefit depends upon how extensively and how judiciously the Guidelines are applied.

It is important for the recovery of the grizzly bear that: (1) grizzly habitat be identified and managed as one continuous unit where possible; (2) management priorities be established; and (3) the continuity of management be maintained. Adoption and use of the Guidelines will promote such management. These multi-agency guidelines identify management direction to be taken in behalf of the bears which cross through the



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jurisdiction of several State and Federal agencies. It is an effective method of identifying possible interagency management conflicts so action can be taken to resolve the conflicts and provide compatible management across agency boundaries.

Except for a few areas, we believe that the management situations delineated by the Shoshone, Bridger-Teton, and Targhee National Forests, and Grand Teton National Park reflect an accurate appraisal of grizzly use and desirable management. The steps the Forest and Park Services have taken to resolve difficult issues and make a commitment to grizzly management are commendable. The full array of management situation designations will be an important tool in making management decisions. These designations identify good grizzly habitat so that limited resources can be used to direct efforts where the most benefit will result.

There are, however, things that the Guidelines and this biological opinion will not do. The management situations identify areas necessary for species survival and recovery and consequently imply critical habitat. Our biological opinion cannot ratify this implied designation of critical habitat. These management situations should be considered as interim management zones until official designation of critical habitat has been published.

It is desirable to take an umbrella approach with consultations covering management recommendations. However, in such a consultation it is impossible to: (1) identify specific impacts of projects that have not been proposed; (2) relate project impacts to the biological components and the manner in which grizzlies use an affected area; and (3) predict the degree of compliance with the Guidelines. It is impossible to render a biological opinion on all programs and activities identified in the Guidelines in each of the five management situations. Consultation on Forest Management Plans, Park Master Plans, Park Resource Management Plans, or projects developed through use of these guidelines will be more appropriate than consultation on the guidelines.

Implied in the Guidelines is the assumption that all agencies adopting the Guidelines will fully implement them. This is necessary to achieve the continuity of management. Without standard application, management will remain fragmented and, therefore, less effective.

The Gallatin National Forest and Yellowstone National Park have not identified the full array of management situations upon which the Guidelines are based. The failure to delineate management situations on the Gallatin National Forest fragments this attempt to develop the Guidelines and makes implementation of the Guidelines and conservation of the species less effective. Grizzlies are known to occur outside the areas delineated as Management Situation 1 on the Gallatin National Forest and good grizzly habitat exists outside this zone, so these areas require delineation. Known conflict sources, such as livestock allotments that may be preventing

grizzlies from reaching carrying capacities in areas that qualify as Management Situation 1, need to be resolved. We recommend that the Gallatin National Forest make the commitment other Forests have made by delineating all five of the management situations that may occur in their area of jurisdiction.

The same situation exists in Yellowstone National Park. There may be valid administrative reasons for Yellowstone not delineating management situations. However, the structure of the Guidelines implies that Yellowstone accepts the concept of management situations and their recommended management. If Yellowstone National Park is to be signatory to the Guidelines, the Park should either delineate management situations or specify that management is directed by the Yellowstone Operating Procedure Bear Management Policy attached as an Appendix to the Guidelines.

RECOMMENDATIONS

We concur with almost all of the management directions, but have the following recommendations.

1. Program/Activity Review: The Guidelines indicate that U.S. Forest Service procedures (1977) will be used in most instances to evaluate the effects of activities and programs upon grizzlies and their habitat. We agree that the procedure is an excellent method of determining habitat quality and estimating consequences of specific project impacts. However, the method does not require a consideration of the cumulative effects of past, ongoing, and foreseeable actions which may certainly change the "consequence analysis" ratings. We recommend that the U.S. Forest Service procedures (1977) incorporate the consideration of cumulative effects on the grizzly and its habitat.

2. Timber Management: Post-sale area improvements are outlined in which reforestation is cited as a method to establish cover patches in cut blocks and supplemental cover screens for wet meadows, marshes, bogs, ponds, and other riparian areas. We are not opposed to habitat improvement but suggest that these measures are unnecessary if adequate "leave strips of uncut timber" are properly programmed into the sale design and contract.

The Guidelines recognize road closures as an important management tool but they are vague concerning when roads will be closed to the public. Road closures after termination of timber sales will not adequately protect the grizzly in all cases. We recommend that road closures during the logging contract period, as well as after termination of the sale contract, be considered.

3. Range Management: The conflict between sheep and grizzlies is well documented by the Interagency Grizzly Bear Study Team, Border Grizzly Project, and our own Animal Damage Control program. The recent

illegal killing of grizzly #14 on Boone Creek and other suspected poaching demonstrates the incompatibility between grizzlies and sheep allotments in Management Situation 1. The recovery of grizzly in areas where this type of conflict occurs will continue to be suppressed.

The Guidelines describe various management alternatives to eliminate or lessen this conflict, including removal of bear attractants, changing the season of use, bedding practices, grazing areas, or changing from sheep to cattle if the range is suitable for cattle. These measures are designed to reduce or eliminate the conflict between bears and sheep. They do not, however, address the conflict that occurs between man and bear. Indiscriminant and illegal killing of grizzly bears to prevent sheep depredation still occurs. If operators on sheep allotments in Situation 1 areas are not willing to operate within the framework of the Guidelines, we recommend the sheep be removed.

This completes the formal consultation process on the Guidelines for Management Involving Grizzly Bears in the Greater Yellowstone Area. We appreciate the cooperation, including the extension of time, your staff has given us in meeting our joint responsibility under the Endangered Species Act.

Sincerely yours,



JAMES C. GRITMAN

Acting Regional Director

REFERENCE CITED

- U.S. Forest Service. 1977. Method for determining grizzly bear habitat quality and estimating consequences of impacts on grizzly habitat quality. Prepared by Stephen P. Mealey. Northern Region Contract No. 11-1200. Missoula, Montana. Multilith. 47 pp.

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P. O. Box 1888
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307-733-2752

Custer National Forest

P. O. Box 2506
Billings, Montana 59103
406-245-6111

Gallatin National Forest

P. O. Box 130
Bozeman, Montana 59715

Grand Teton National Park

P. O. Box 67
Moose, Wyoming 83012
307-733-2880
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Shoshone National Forest

P. O. Box 961
Cody, Wyoming 82414
307-587-4297

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